SOUTHERN TEXTILE BULLETIN

VOL. XX. CHARLOTTE, N. C., THURSDAY, DECEMBER 9, 1920. NUMBER 15

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Some of these conditions are discussed in "Picks to the Minute" (on textile mills) and in "Factories for the Future". Write for either or both.

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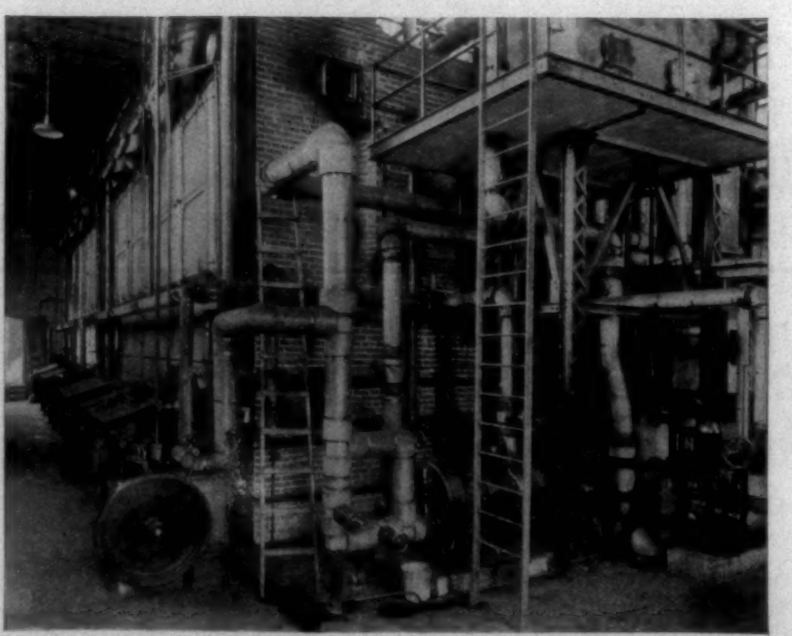
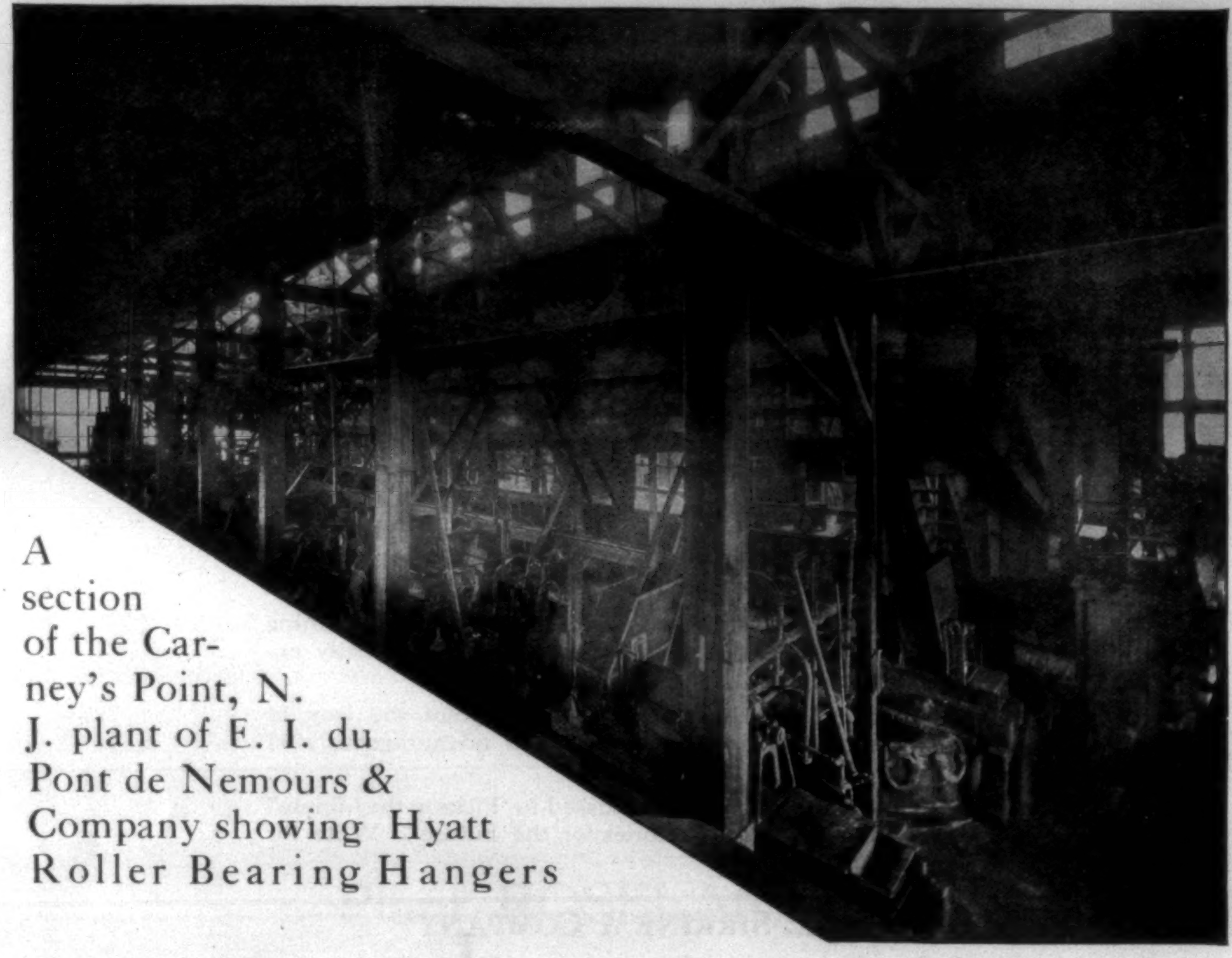


To secure the most returns out of the power plant, it must be designed, for naturally efficient operation and provided with proper measuring and recording devices so that its efficiency may be determined and maintained. Boiler room of Exposition Cotton Mills, Atlanta, Ga.



A section of the Carney's Point, N. J. plant of E. I. du Pont de Nemours & Company showing Hyatt Roller Bearing Hangers

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E-144

SOUTHERN
TEXTILE BULLETIN

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VOL. XX. CHARLOTTE, N. C., THURSDAY, DECEMBER 9, 1920. NUMBER 15

Dyeing of Cotton—Past and Present

This interesting Article by Louis A. Olney which appeared in the November issue of Dyestuffs, published by the National Aniline and Chemical Company, gives an interesting historical outline of the Science of dyeing, development of Union colors, classification of coal-tar dyes, sulphur colors, Turkey red and para red, vat dyes, dyeing machinery, etc. Many changes have taken place since Pharoah dyed fancy robes to the present time.

The dyeing of textile material is an ancient industry. We have positive evidence that a process of indigo dyeing was in use during Pharaohs time and there is every reason to believe from various ancient writings, that other coloring processes were in use at still earlier dates. The early knowledge in regard to dyeing was almost entirely empirical, i. e., attained through promiscuous experimentation in various directions without any systematically or scientifically laid plan. About the earliest constructive or scientific literature in regard to dyeing appeared during the latter part of the eighteenth century, and was written by three Frenchmen, Hillot, Macquer and D'Apilgny, and was translated into English in 1789. While from the modern point of view this book contains but little of value, it furnishes rather entertaining and not wholly unprofitable reading. The first English writer of note upon the subject was Edward Bancroft, M. D. His first writings appeared as early as 1769 but it was not until 1814 that he published his classical work in two volumes entitled "Experimental Researches Concerning the Philosophy of Permanent colors." This may be looked upon as about the first scientific contribution to literature on the art of dyeing. Bancroft's classification of dyes into "Adjective and Subjective Dyes" is really used today, but under the headings of "Mordant and Direct Dyes.

Fundamental Considerations Involved.

The dyer in all ages has been confronted with one basic consideration, namely, the entire difference between the action of vegetable and animal fibers toward chemicals and dyes, and in the light of modern dyes and recent developments this difference has become even more marked. A process that will dye wool and give excellent colors may not dye cotton at all and other processes excellently suited for dyeing cotton if applied to wool would result in the complete destruction of that fiber. For these reasons cotton and wool dyeing naturally become two quite different problems and this is the reason why we so frequently hear cotton and wool dyers spoken of as quite different individuals.

Modern developments in the textile industry have lead more and more to the production of union fabrics with two or more fibers, usually cotton and wool, or cotton and silk, combined together. This combination of animal and vegetable fibers in the same piece of goods immediately complicates matters as far as dyeing is concerned. Many of the most satisfactory wool dyes as well as a large proportion of the desirable cotton dyes are immeriately eliminated for the dyeing of this union material. Dyes must be selected for this purpose which naturally, or through skilful manipulation, can be deposited upon and within both animal and vegetable fibers so as to give the same depth of shade and approximately the same degree of permanence with each. This often becomes a difficult matter and the dyer of union material is confronted with many problems which are seldom if ever met by straight cotton, wool or silk dyers. In the early days of manufacturing, a mill was almost without exception a cotton mill, a woolen or a silk mill, but today there are very few of the larger textile corporations that do not use at least two of these fibers and many all three. In addition to these, the artificial silks (luster celluloses) of different types have been introduced. It is therefore evident that the modern dyer cannot confine himself entirely to either cotton or wool, but must have a working knowledge of both fibers and their coloring properties.

Classification of Dyes.

The coal-tar dyes may be classified in several different ways but for the use of the practical dyer there is but one satisfactory method, namely, that which divides them according to their action upon the different fibers; in other words, according to their methods of application. This classification recognizes ten groups as indicated in the following table. The fibers to which these dyes are applicable are also indicated in each case, and their most important uses in **blackface** type. A blank line indicates that dyes are either not used at all or their application so limited as to be

Class of Dye	Fibers Upon Which They are Applicable		
1. Basic dyes	**Cotton**	Wool	**Silk**
2. Eosins and related dyes	Cotton	Wool	**Silk**
3. Acid dyes		**Wool**	Silk
4. Direct cotton colors	**Cotton**	Wool	Silk
5. Sulphur dyes	**Cotton**	.....	....
6. Mordant dyes	Cotton	**Wool**	Silk
7. Mordant acid dyes (after chrome colors)		**Wool**	Silk
8. Insoluble azo dyes	**Cotton**	.....	....
9. Reduction vat dyes	**Cotton**	Wool	Silk
10. Aniline black	**Cotton**	.....	....

Previous to about 1860 cotton dyers were limited in their selection of colors to various vegetable products and a few mineral pigments which were commonly produced from various combinations of chemicals during the process of application. The most important vegetable dyes were logwood for black; indigo for blue; madder for fast shades of red and the red dyewoods such as barwood, Lima wood, and saunders wood for the cheaper and less permanent reds; fustic, quercitron, Persian berries and tumeric for yellow; and cutch for brown. There was no straight green dye of importance, but for that purpose indigo combined with some yellow dye was commonly used. Olives, tans, browns, drabs, slates, etc., were produced by various combinations of these dye woods. The above were all mordant dyes except indigo, a reduction vat dye, and tumeric, one of the very few vegetable dyes which appeared to have direct affinity for cotton. The mineral dyes applicable to cotton were Prussian blue, iron bluff, chrone yellow and manganese brown.

The variety of shades that could be produced with all of the forgoing dyes was limited and the brilliancy of the colorings was not by any means equal to the possibilities of to-day. This fact is conspicuously emphasized when one has an opportunity to compare the sample books of a large print works of today with those of the same concern fifty or more years ago.

In 1856 Perkin discovered the first coal-tar color, which became commercially known as "Mauve." It was a basic dye of only ordinary value and has long since been replaced by other more desirable dyes, but from a historical point of view it is of more interest than any other. By 1869 the coal-tar color industry had become an assured fact and from that time on its development was phenomeal and different classes of dyes were introduced with great rapidity. Great difficulty was at first experienced in producing dyestuffs that would color cotton directly. For nearly twenty years basic, acid, phthalic anhydride, mordant dyes and aniline blacks were the only groups represented. The basic colors, and mordant dyes had to be applied in conjunction with mordants which at once introduced a complication. The acid dyes possessed no affinity whatever for cotton, and aniline black was applied by a rather complicated and extremely sensitive process. The wool dyer during the same period had at his disposal many coal-tar dyes that would color wool directly. The acid dyes, basic and phthalic anhydride colors all dyed wool without the use of a mordant. As time went on the demands of the cotton dyer for direct dyeing colors became more urgent and, emphatic, but it was not until 1884 that the first direct cotton color, Congo Red, was put upon the market. From this time on developments were much in the cotton dyers' favor. Congo Red was rapidly followed by numerous other direct cotton colors possessing great variations in color-producing properties.

The direct cotton colors as a group had decided limitations as far as usefulness was concerned. Their fugitiveness to washing and their property of bleeding eliminated them almost entirely for calico printing and for the dyeing of yarn

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which is to be used for ginghams and shirtings where white or light colors were to be used in conjunction with shades produced with direct cotton colors.

The cotton dyer however did not have long to wait for improvements in this respect, for the sulphur colors introduced during the 1890's possess excellent fastness to washing in most cases, very good to light and were even sufficiently fast to mineral acids to permit of union cloth composed of white wool filling and cotton warp, dyed with a sulphur dye to be dyed with wool color in a decidedly acid bath. These sulphur colors have proved of great value to the cotton manufacturer, on account of fastness and comparative simplicity of application. They may be applied in the dyeing of gingham, shirting, hosiery and for numerous other purposes. They cannot be used successfully in calico printing on account of their action upon the copper rools. In most instances the sulphur colors are very sensitive to chlorine, but in most cases this is no serious drawback. Among the sulphur colors blacks, blues and browns predominate, in fact they are characterized by the general somberness of the shades they produce. There are some sulphur yellows and greens, and some sulphur maroon and a dull reddish violet but as yet no real sulphur red has been discovered. The American color manufacturers have made excellent headway in the manufacture of sulphur colors both as to quality and yield, and we frequently hear the report that some of the domestic suhphur colors are superior to any of the pre-war products.

For hundreds of years the favorite red upon cotton was Turkey Red which was produced with Madder in conjunction dith an aluminum mordant. The process of application was complicated, involved ten or a dozen different steps and then required several weeks for competion, but the final result was such an excellent red as far as attractive shade, and permanence was concerned, as to repay the dyer for his labors. It would resist sunlight for weeks, repeated washings and even a mild bleaching process. With the introduction of sulphonated Castor Oil (Turkey Red Oil) the time required was shortened materially, but even then it was impossible to produce a satisfactory red in much less than three or four days. In 1868 Alizarine, the active coloring principle of madder root, was made directly from anthrancene, a coal-tar product, and while this facilitated matters a little it did not materially affect the length of time consumed in the application. About 1890 a decided innovation in dyeing and calico printing was introduced in the form of the co-called insoluble azo dyes. Of these the so-called para red and the alphanaphlamine claret were by f ar the most important. The former (para red) gives dyeings equal in brilliancy to Turkey Red and of sufficient fastness in most every respect to answer the requirements of Turkey Red. The process of application consists simply in preparing the cotton cloth with a sodium beta-naphtholate solution, drying and then passing through a solution of diazotized paranitranline. The actual production of the color only requires two or three minutes but if all of the preparing and drying processes wer considered this would be extended to half an hour or more. It can readily be understood why Turke Red dyed on printed cloth soon los its supreme position as a cotton red and why para red has almost entirely replaced it for all of the ordinary requirements. The claret re is produced in a similar way to par red, and for deeper and bluer red is almost as extensively used as the former.

The latest development in cotton dyeing and perhaps the one presenting the greater possibilities was the introduction of the Reduction Vat Colors commonly spoken of as the Vat Dyes. In one sense they were not new, for indigo is a typical vat dye, but it had remained the sole repersentative of the class until 1901 when Indanthrene was introduced. Indanthrene produces shades of blue which are brighter and faster than indigo, but is of entirely different chemical structure. The discovery of indanthrene and flavanthrene, a valuable yellow vat dye, awakened great interest as to the possibilities of the group and the period of extensive research which followed was well rewarded. One after another vat dyes were discovered until today it is possible to produce not only a great variety of vat blues, but reds, scarlets, violets, yellows and through combination almost any color. As a group the vat dyes possess very excellent fastness to washing, and in some instances will go through a complete bleaching process without being materially altered. The earlier vat dyes like indanthrene also possessed a remarkable fastness to light; indanthrene being much superior to indigo in this respect. This fact led color chemists and dye users to hope that the whole class of vat dyes would maintain an equal degree of light fastness but in this respect they were disappointed, for some of them possess rather inferior fastness to light. Their fastness to washing and soaping is well maintained throughout the group an thus renders them of great value the manufacture of ginghams an shirtings and calico prints, and certain cases their resistance chlorine makes them useful towel borderings which have to subsequently bleached.

The principle involved in the application of the vat dyes is simpl In their commercial form they a all insoluble in water, but wh strongly reduced with hydrosulphi they are temporarily modified chemical composition and readily into solution in an alkaline ba From such a bath they are read absorbed by cotton material, and soon as such saturated material exposed to the air or some other oxidized influence, the reduced d is converted back to its original insoluble form in which state it is permanently retained by the fiber. In practice, however, the operation is not so simple as would be anticipated. For some time after their introduction they caused much trouble owing to their many pecularities

(Continued on Page 31).

The Incadescent Lamp—Its History

formation compiled by Henry Schroeder Commercial Engineer- ng Department—Edison Lamp Works, of General Electric Co., Harrison, N. Y.)

n 1810 Sir Humphrey Davy dis- ered that thin strips of metal ld be made white hot and give t by the passage of electric cur- t through them. He obtained rent from a voltaic battery he d made consisting of a large num- r of cells. Many years later, after the dynamo-electric machine was invented, several scientists experimented with carbon rods and plates taking a heavy current at a comparatively low voltage. Edison tried a platinum-iridium wire with a thermostatic arrangement to shut off the current when the temperature came too close to the melting point.

Up to about 1879 the only known method of disturbing electric current was the series system, in which scientists insisted that the internal resistance of the generator must be equal to the external circut to obtain the maximum possible efficiency of 50 per cent, in accordance with the principle of the primary battery circuit. Edison conceived the multiple system, a constant voltage, subdividing the current which scientists declared was impossible. He reasoned that in order to distribute current any distance the voltage must be comparatively high, and the filament must have a high resistance or very small diameter. On October 21, 1879 he made a lamp with a carbonized thread for a filament which he sealed in an all glass air tight globe, platinum wires (which expanded at the same rate as glass) going through the glass to connect with the filament, the air exhausted by a Sprengel pump, the tube connecting the bulb with the pump being melted off as in the present day lamp. This lamp lasted forty hours, and was the first step in his invention of a complete multiple lighting system with all its necessary parts: generator, switchboard regulator,feeder, meter,cutout fuse, socket and lamp, all the essentials of which are in use today. Many p experiments were made, and ally a lamp with a carbonized pa- filament was adopted.

n December, 1879, a public exhi- on of the incandescent lamp was de at Menlo, Park, N. J., where son's laboratory was located. erhead wires were run from the mo in the laboratory to several ses and to street lights on poles, ut sixty lamps being installed. s exhibition created an inmense or, and the value of gas stocks pped in the stock market. Thou- ds came out to see the new light t was thought would put the gas panies out of business.

The first commercial lamps, made 1881, consumed nearly 100 watts d gave about 16 candle-power, ving an efficiency of about 5.8 atts per candle. They lasted about 300 hours but blackened very early in their life, the lamps giving a very small part of their initial candlepower when they finally burned out.

It is interesting to compare this with the present day Mazda lamp which gives about seven times the amount of light for the same energy consumption. It has been estimated that if a 100-watt Mazda lamp were manufactured so as to give the same light (16 candle-power) as Edison's first commercial carbon lamp, it would have a life about one hundred thousand times as long. If Mazda lamps were made at this poor efficiency, the extra coal required to produce the amount of electric light used in the United States during 1919 would have cost about half a billion dollars, or about ten times the value of the lamps purchased during the year.

In the fall of 1881 it was realized that 5.8 watts per candle was an undesirably and unnecessary low efficiency and the standard was changed to 4.66 watts per candle giving a total life of 900 hours.

His main lamp patent No. 223,989. is interesting, as the general principle of making lamps is practically the same today, although enormous strides have been made since the first commercial lamps were made. This patent was tested in the courts, and after many years of litigation was finally upheld in the lower court in 1891 and sustained in the Appellate Court in 1892.

The Edison Lamp Company started operations in November 1880, at Menlo Park, making lamps with carbonized bamboo filaments and bulbs blown from one-inch tubing. Again in December ,1880, many houses and streets in Menlo Park were lighted for public exhibition, using about 500 lamps which were operated two nights a week for several weeks. Underground cables were used to carry the current.

At this time a change in the lamp was made by using bulbs blown at the glass works, direct from the pot. The next improvement came soon after, the flat seal, which being a pot-blown bulb, nickle or platinum screw clamp, carbonized bamboo filament, flat seal.

The steamer Columbia was equipped with an electric light plant which was started on May 2, 1880, the 115 lamps having carbonized paper filaments. Three 60-light dynamos were installed.

On land the first commercially installed plant was made in January, 1881, in the establishment of Hinds, Ketchum & Company, New York City. In August, 1882, the first central station plant was established at Appleton, Wisconsin, and the second was the Pearl Street station in New York City, in September, 1882.

During 1881 about 30 000 lamps were made and sold at a dollar each. During 1919 it is estimated that the world's output excluding miniature lamps, was about 400,000,000 lamps, worth about $100,000,000. Nearly half of these were used in the United States, a great majority of which were made by the General Electric Company, manufacturers of the Edison lamp.

The original bases used on the early lamps consisted of a brass ring and a screw shell, held together and to the bulb by plaster of Paris. When the lamp was screwed in the socket, it caused a tensile strain on the plaster of the base and it broke easily. In June, 1881, an improvement was made by changing the conducting parts to a screw shell and an end cap, also shown in Fig. 6, which made a compression instead of tension on the plaster of Paris so that there was less tendency for it to break. The ring of plaster around the neck of the bulb was omitted in 1884. In 1900 moulded porcelain and in 1901 black glass was used for the insulating parts. This, together with Portland cement mixed with rosiin which is used to fasten the base to the bulb, resulted in a weatherproof lamp.

Early in 1881, the platinum clamps to fasten the filaments to the leading-in wires were abandoned, the filament being electrically copperplated to the lead wires. In 1887 a further improvement was made by the use of a carbon paste, which is now used.

In 1888 the efficiency of the lamp was considerably improved by coating the filament with asphalt. The lamp now consumed but 50 watts to give 16 candle-power having an efficiency of 3.1 watts per candle. In 1893 bamboo was superseded by cellulose as a filament. This is now made by dissolving absorbent cotton in a solution of zinc chloride, the resulting syrup being squirted through a die into alcohol. The alcohol hardens the thread formed, which is then washed, dried, shaped and carbonized. The carbonized filament is then "treated" by burning it in a hydrocarbon gas, the heat decomposing the gas, coating the filament with a graphite carbon. This filament is used in the carbon lamp of today.

This filament had a lower resistance and therefore was made longer. In order to fit into the bulb, it was looped. the loop being supported by an anchor to the stem.

The carbon lamp is still used to a slight extent today on account of its cheapness and ruggedness.

In 1905 as the result of experiments conducted by the Research Laboratories of the General Electric Company, an improved filament was obtained by heating it, before and after "treating," to a very high temperature in an electric furnace. This produced the Gem, or metallized carbon filament lamp. This heating changed the resistance characteristic of the filament from negative to postive. like that of metals. that is the resistance of the Gem filament when hot is higher than when it is cold. This filament resulted in an increased efficiency 2 1-2 watts per candle), sothat to produce 16 candle power required but 40 watts. The Gem lamp is now no longer manufactured as its most expensive filament has been displaced by the more efficient tungsten filament.

In 1906 the tantalum lamp appeared on the market. Tantalum is a metal which can be drawn out into a wire, and on account of its low resistance the filament was about twice as long as a carbon filament. It could be operated at a higher efficiency, 2 watts per candle; the equivalent of 32 watts for 16 candlepower. It could not be satisfactorly used on alternating current and so gave a shorter life. It disappeared from the market at the end of 1913 on account of the very high efficiency of the tungsten lamp, which appeared the next year (1907).

The first lamp while having a very fragile filament, had the very high efficiency, compared with prior lamps, of 1.25 watts per candle; the equivalent of 20 watts for 16 candlepower. The early lamps had "pressed" filaments, that is, they were made by squirting a paste of finely powered tungsten mixed with a suitable binder, through a diamond die. The resulting thread was made into hairpin loops by passing current through them in an inert atmosphere which evaporated the binder and scintered the tungsten particles together. Sufficient hairpin loops were then mounted on a spider and connected in series to make the proper length of filament.

Prior to 1910 a process was developed by Dr. Coolidge of the Research Laboratories of the General Electric Company, at Schenectady, whereby tungsten was converted from a brittle to a ductile metal, so that it could be drawn out into a wire. This greatly simplified the process of manufacture of the lamp very materially reduced its fragility, and permitted a one-piece continuous filament.

The trade mark Mazda was adopted late in 1909 as the mark of a cooperative service rendered by the Research Laboratories at Schenectady, which services consists of the obtaining of scientific and practical data from research laboratories, incandescent lamp laboratories and lamp factories all over the world, and transmitting to manufacturers entitled to receive this service such information as will enable them to improve the quality of their lamps.

The selection of the word Mazda a trade-mark was an extremely good one, because Persian mythology gives to their ancient god of light the name of Ahura Mazda, and as the Persian light was knowledge, so the trade-mark Mazda of today stands for the accumulation and transmission of knowledge.

The filament of all Mazda lamps at the present time are made of tungsten. When any material more suitable for the purpose is developed, lamps made using that material as the light source will be Mazda lamps.

About 1913, through the discovery by Dr. Langmuir of the Research Laboratory, at Schenectady, the efficiency of a Mazda lamp was materially increased by the use of an

(Continued on Page 31).

Carolina Co-operative Council Organized at Spray.

Following up a course in business training which 176 members of the Carolina Cotton & Woolen Mills Company had taken for a period of three months, all the members voted to form themselves into a permanent organization so that they might continue their fellowship together and study over problems common to all of them and hear lectures and talks from experts all over the country.

In October, 1920, the organization committee appointed authorized by the business training course body drew up tentative constitution and by-laws which were accepted by the whole body after discussion and revision. The object of the Carolina Co-operative Council, the name by which the body is known, is stated in the constitution as follows:

"The object of this council shall be to promote among its members a better spirit of fraternity and co-operation and to give each individual member an opportunity for self development. It shall be its further purpose from time to time to study certain definite problems of mutual concern that shall come before it and shall seek in a co-operative spirit to solve these problems in the interest of the entire organization. It shall seek further to bring the executives, the managing personnel and all the leaders in the industry into a closer social relation to the end that there may be a better understanding among them and that there may be developed a spirit of common interest and friendliness among all the members. With this co-operative spirit ever before them it is hoped that the council may provide means for exchanging ideas and suggestions and promoting anything

On the night of November 15th, 1920, the Carolina Co-operative Council held its first meeting. This of general welfare.' meeting was held in the auditorjum of the Spray Graded School and was attended by practically 150 men who have the rank of managers, superintendents, foremen, second hands, loom fixers and section men.

The meeting was of the inspirational and social kind combined. The very efficient program committee of the council had ordered a barrel of nice apples and several boxes of cigars and cigarettes and these were greatly enjoyed by the members. The feature of the meeting was an inspirational talk given by Mr. Walt S. Goodwin, of New York City. Mr. Goodwin in his own incomparable style talked for one hour on traits of success and with his keen humor and forceful style kept the men continually interested and enthusiastic. After the talk of Mr. Goodwin, the chairman of the council made a few remarks on the local conditions and expressed his hope for the great future of the Carolina Co-operative Council.

It is the plan of this council to have at least eight meetings during the year and at all of these meetings to have some inspirational speaker to talk to the members. Some of the very best men and women in the country will be secured and great interest is being manifested in the meetings from month to month. The next meeting, which will be December 13th, will be addressed by Mr. Johnson Heywood, of New York City. Mr. Heywood is a lecturer and writer and is very popular. Later the program committee of the council expects to have in Spray Dr. Charles H. Eaton, of Leslie's; Ralph Parlette, the noted humorist and lecturer; Miss Ida M. Tarbell and others.

There are also planned two big social meetings during the year. At all these meetings the open forum method is employed and every member has a chance to express his views. Each quarter, plant production reports will be reviewed and discussed, and it is expected that eventually the Carolina Co-operative Council will interest itself in all the important phases of the plant and community life.

Full Time and Cut Pay at Consolidated Mill.

Greensboro, N. C.—On the Union division of the Consolidated, at La fayette, Ga., where mill operatives have been on three day a week basis full time schedule were resumed last week, according to an announcement by Allen F. Johnson, of this city, vice president in charge of mill operations of the Consolidated.

At the same time that full time was resumed 20 per cent reduction in wages became effective. Mr. Johnson states this arrangement is entirely satisfactory to the operatives, pointing out that neighboring mills had already reduced wages.

The Consolidated properties at LaFayette embrace 25,000 spindles, 300 operatives are employed. Sheetings and drills are manufactured.

This is the first of the Consolidated mills to cut wages. The curtailment of operations now in effect in the mills of this corporation averages approximately 40 per cent.

Effective today, the second wage cut in two weeks was made at the Danville Knitting Mills, Danville, Va., according to authentic information obtained here. The reduction entirely eliminates the wartime bonus, putting the employes on "flat time." Market conditions are responsible for this, it is stated.

Last Installment of Taxes Due Dec. 15.

Washington.—December 15 is the last day for the payment of the fourth installment of the income and excess profits taxes due this year. To avoid penalty, the tax must be in the offices of collectors of internal revenue or branch offices by midnight of that date.

Inquiries reaching the bureau indicate a belief that taxpayers have 10 days' grace on this installment. Such a provision was contained in the 1917 Revenue Act, but was removed by the Revenue Act of 1918.

Payment of the fourth installment may be made in cash or by money order or check. The Bureau of Internal Revenue urges that whenever possible payment be made by check or money order. This method helps the taxpayer by saving him a trip to the collector's office and avoids congestion at the cashier's window. Check or money order should be made payable to "Collector of Internal Revenue."

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A Builder of The New South

Daniel A. Tompkins and his life work by Richard H. Edmonds in Manufacturers Record. Being a review of Dr. Winston's recent book, "A Builder of the New South.)

In the same year in which The Manufacturers Record was established—1882—a young man, who had left his home in South Carolina and worked his way through a technical college, who had then spent years in machine shops designing and building machinery, afterwards going to Germany to erect machinery for an American firm, settled in Charlotte, N. C. He was without capital, and practically without acquaintanceship in that city. He secured the agency for the Westinghouse engine, but as it was a new and novel device its introduction was exceedingly slow. Establishing a small machine shop, he worked as a machinist with his hands and as a genius with his brain.

This young man, D. A. Tompkins, by inherent strength of character and brain, by the most tireless energy which we have ever known, became one of the greatest of the industrial leaders of the South, and for many years was probably more widely known as an industrial upbuilder and creator of manufacturing industries than any one of the other great leaders of that day.

D. A. Tompkins was a marvelous genius. It is difficult to speak in sober words of a man who accomplished so much and of such a wide variety. He was the leader in the development of the cottonseed oil industry of the South, and the machine company which he organized became the recognized leader in the building of oil mills from Carolina to Texas. Tompkins planned and built more than 250 oil mills, but he did not concentrate his energy on one industry. He worked with equal activity in encouraging and building cotton mills, and he gave much of his time to the encouragement of the organization throughout the South of building associations, with a view to enabling people of small means to own their homes.

He did not, however, center all of his activities even upon these interests, for he was constantly on the go, living for many years a greater part of the time in sleeping cars and in boarding houses and hotels, working wherever he might be with tireless activity and a broadness of vision which made him a dominant power in Southern development. He became a leader in many of the great organizations of the country, such, for instance, as the National Association of Manufacturers, in which for years he took a leading part. Wherever he went, or into whatever organization he entered, he almost instantly became a dominant figure, for men everywhere recognized the strength of his intellect, the clearness of his vision, the safety of his judgment and the fullness of his knowledge.

Two interesting facts in connection with his work are typical of the life which Tompkins led and the work which he accomplished. Shortly after he opened his office in Charlotte he called upon the writer, who had only a few months before met him for the first time. Tompkins was on his way to New York to sell a cotton mill for one of his clients to the American Cotton Oil Company. He said that he did not believe that the organization was being wisely effected, nor did he believe in any one concern absorbing all of the cotton oil mills of the South, which that company apparently had planned to do. But as his client was anxious to sell a mill, he was on his way to effect a sale. In the course of his talk he outlined the reasons why, in his opinion, newly-built mills with modern equipment could produce oil at a profit, when the old mills, many of which were out of date, but which were being bought by the American Cotton Oil Company, would scarcely be able to exist. He was asked to write his views on the subject. Within a few days we received and published the first article in a proposed series to cover the whole cotton oil situation. This was marked No. 1, with the statement that other articles would appear in following weeks. But the next week passed by without any word from Tompkins. We wrote him and wired him urging the importance of completing the series. This brought a visit from him, and he explained that the more he had studied the subject for the preparation of the series of articles promised, the more he was impressed with the strength of the situation, and that he had used all the data gathered and put it in the form of a prospectus for a proposed oil company, and he had sent this to a large number of the big consumers of cotton oil. It met almost instant cordial reception, with big subscriptions promised. The company was soon organized as the Southern Cotton Oil Company, with a subscribed capital of $2,500,000. All this preliminary part of planning the company and raising the capital had been accomplished, as we remember it, in about 30 days. It was then along in April or early May, and it was necessary that these new mills should be built and in operation by early October for the coming cotton crop. Tompkins instantly centered his whole energy upon planning eight mills, to cost each about $250,000, and the selection of sites all the way from Carolina to Arkansas and Texas. By early October every mill had been completed and was ready for the new crop.

That was merely one illustration of Tompkins' activities and the energy with which he pursued every plan that he undertook.

About 25 years ago, at the time when Tompkins was one of the directors of the Seaboard Air Line, The Manufacturers Record received a letter from the late William C. Lovering, then president of the Arkwright Club of Boston, an association of cotton manufacturers, asking for certain information about waterpower opportunities in the South in connection with cotton mill building. The letter was referred to Tompkins. He immediately saw the opportunity and suggested to E. St. John, then vice president of the Seaboard Air Line, that an official invitation from the road should be extended to Mr. Lovering to appoint a committee to come South and study cotton mill possibilities. This invitation was sent through the editor of The Manufacturers Record, and five leading cotton mill men of Massachusetts were named as a committee. They came South, and from Norfolk were for the next 10 days the guests of the Seaboard Air Line. There were some eight or nine of us in the party, and the trip was regarded as of so much importance that the Associated Press sent a correspondent along in order to keep New England papers advised as to the movements of this committee. The trip covered the cotton mill regions of the South as they then existed along the Seaboard Air Line.

The Southern Railway asked for the privilege of taking the entire party through the mountain regions of western Carolina, and the Seaboard accepted the invitation. The party thus had the opportunity of seeing, for the first time for most of them, the wonders of the western Carolina mountain region.

D. A. Tompkins was with the party during the entire trip, and took the responsibility of giving them the detailed technical information needed. The vice president of the road was also along, and the president joined for a few days. As an immediate outcome of that trip the five New England men and their associates built five cotton mills, each costing over $1,000,000, including the Massachusetts Mills, near Rome, Ga., by the company of the same name in Massachusetts, controlled by Mr. Lovering and his associates; the Lindale Mill, near Gadsden, Ala., and other mills of which these were but types.

These two achievements typified Tompkins' ability to see an opportunity and seize it. A little later on, with a view to encouraging the industrial development of the South, he purchased The Charlotte Observer, and in connection with Mr. Caldwell, who was associated with him in ownership and management, The Observer became the leading spirit among the daily newspapers of the South in encouraging industrial development. Tompkins had a nose for news which enabled him, wherever he might be, whether on the train, in a hotel or in private conversation, to catch everything whatever out of which a good piece of news of an industrial character might be developed. His notebook was ever ready, and a line or two jotted down on some casual conversation, some chance remark in the sleeping car, some speech in a great assembly, would furnish him the basis of a news item or an editorial pertaining to the development of the South. He made The Observer the foremost secular paper in the country in the exclusion of sensationalism and in the publication of facts about the material things of life. He told the men in The Observer office that the improvement of a farm or the building of a factory was a far more important piece of news than some cutting or murdering scrape or sensation. "If," said he, "you want to publish sensations, have a man live at the Chicago morgue and he can supply you daily with all the sensations of murders and suicides that you can publish. But, in my opinion, that is not good newspaper work. The stimulation of local interests, the publication of news which adds to the employment and the betterment of mankind, is infinitely more important than is a story of a murder or of a divorce, or of an elopment." With that spirit dominating The Observer office, it soon became not only one of the cleanest daily newspapers which this country had ever had, but one of the most intensely interesting and helpful in the upbuilding of that section.

Shortly after getting The Observer on its feet Mr. Tompkins and his associates established an afternoon paper and developed a feature not found in any other daily paper in the country. He had always held the view that the cotton mill operatives should regard themselves as people of importance and not feel that they were doing a low class of work, or as he often expressed it to them, "they should not feel sorry for themselves." One of his homely expressions in many addresses to them was "Don't stick out your sore

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toe for public sympathy." He tried to instill in the cotton mill operatives in the early days, when their pay was exceedingly small because of the conditions then prevailing, that they should realize that they were doing a work of importance to the world. They should hold their heads erect, take pride in their work and feel that the opportunity in it was in proportion to their own initiative and force of character.

With the idea of developing this spirit throughout the entire cotton mill region tributary to Charlotte, he secured the services of a very bright young woman for his afternoon paper and had her spend her entire time visiting the people in the cotton mill towns. He instructed her to mingle with them and to send in from every mill reports about what the operatives were doing; taking the ground that it was just as important that they should have mention made of their names, and their marriages, and the deaths in the families, as it was for the society people of Fifth avenue, or Newport, or the other great cities of the country to have their social events recorded.

This young lady was told to secure from all these mill villages photographs of female operatives. No photograph was to be accepted taken in mill costume. The young women who wanted their pictures published must bedeck themselves in their best clothes and take as much care in securing a good photograph as would a society woman. This, too, was with a view to stimulating self-respect. The result was the publication day after day for several years of many columns of gossipy news about cotton mill operatives, which was of intense interest to these people. The pictures of the young women, afterwards published on fine quality of paper, showed a strength of character and an attractiveness of face matching anything that would be found in the columns of society papers of the country.

Things of this kind for the betterment of people and the stimulation of their ambition were one of Mr. Tompkins' fads; a hobby in which he ceaselessly worked for the advancement of mill operatives and other people of small wages. Years before Henry Ford announced his proposed scheme of a minimum of $5 a day, indeed, some years before Henry Ford's first car was built, Mr. Tompkins, in discussing the economic questions of the day, said to the writer that he hoped to see the time come when no man would receive a lower wage than $5 a day, and he enthusiastically elaborated on what that would mean for better education and for the uplifting of mankind generally.

Mr. Tompkins was a protectionist democrat. He believed thoroughly in the necessity of an adequate protective tariff. He was likewise enthusiastically in favor of a subsidy to our merchant marine, and on this point made many addresses before meetings of the cotton manufacturers of the South and other business organizations. He believed that there could be no full development of our foreign trade until the American flag, subsidized by the national government, floated over a great fleet of vessels reaching every important port in the world. Sailing on a ship over which floated the Stars and Stripes any American, said he, would have more strength and force with which to sell goods in foreign lands, than if compelled to travel abroad under some other flag. He held that there was no section of the country which was more directly interested in the upbuilding of a merchant marine through protection than the south, and he emphasized the fact that in early days, when railroad building was so popular, counties, towns, cities and states vied with each other in offering a bonus, or a subsidy, to railroad builders; and he saw no reason why the national government should not give to ocean transportation the same hearty co-operation which municipalities throughout the entire country had given to the development of railroad transportation.

On the last day that Mr. Tompkins and the writer spent together, he ordered an old slow-going horse and surrey, with his old colored body-servant as driver, that we might quietly roam the surrounding country and unobstructedly talk of olden days and of the future problems of our country. He referred to his invalidism as permanent and said: "I am simply waiting patiently for the Master's call."

Shortly after the death of Mr. Tompkins, on October 18, 1914, his executors persuaded Dr. George Tayloe Winston, one time president of the University of Texas, and also of the University of North Carolina, and of the Agricultural and Mechanical College of North Carolina, to undertake to compile out of the letter files and the speeches and the pamphlets and the books of Mr. Tompkins a story of his life, in order that it might be an inspiration to others, and that it might put into permanent form the work of one of the master builders of the South. Dr. Winston has done his work in a way worthy of the subject and into this story he has woven so many facts in regard to Mr. Tompkins and his lifework and the development of the South that this book, "A Builder of the New South: Being the Story of the Life Work of Daniel Augustus Tompkins," should be found in every college library not only in the south, but in the country, and in the library of every man who wants to understand some of the conditions which prevailed in the old South prior to the war, and trace through Tompkins' life the change from ante-bellum days to that full flush of prosperity which Tompkins lived to see, and in which he was such an important factor.

Dr. Winston has written the story of Mr. Tompkins' life with exceeding clearness and absorbing interest. When he undertook the work he found among Mr. Tompkins' papers the letters written when he was a young man to his financee, whose early death caused Tompkins to remain a bachelor through life. After her death these letters were returned by her family to him, and tied up with them were her letters to him; but, fortunately, the sacredness of this correspondence has not

(Continued on Page 31).

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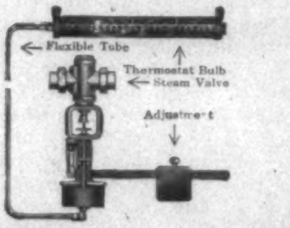

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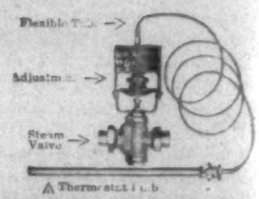

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(1324-A)

Waste in The Process of Cotton Manipulation

Series of Articles on Waste of Cotton From Field to Cloth by Sam Wakefield, Textile Engineer

The operation of removing the otton fibre from the seed is known s ginning. There are two systems nployed; in one the fibre is drawn om the seed by a roller (the roller n) which is used in Egypt and In-ia; and the other in which the lint removed by a circular saw (the aw gin) and is common to Ameri-an practice. The former method is more suitable to long staple cotton and is used in Arizona for Egyptian otton for that reason, but it is also almost solely employed in India and China for short staple.

The merits of the two systems do not enter into the present consideration ,except perhaps to state, that the roller gin will not take in such a large proportion of the trash, past the de-seeding knife, as will the saw, and will consequently produce a cleaner sample from the same grade. But in both cases attention to detail and the manner of ginning are required to produce the best results.

The seed cotton delivered from the feeder falls by gravity into the chamber in which the circular saws are enclosed. The speed at which the bolls are delivered from the feeder can be regulated at any time during the operation of the ginning, and while the machine is running. Thus the work that the says are doing can be increased or decreased at the operatives' discretion. This should be clearly understood at the outset.

In its simplest form, and the only one that is required for properly picked cotton, the gin is a simple mechanism. There are the fundamental operations of holding the seed, while the saw engages with the fibre, tearing the two apart. Given a clean cotton, and a perfect moisture condition, the easiest method in which the separation can be performed is the best for the resulting staple, and for the purpose o which the cotton is eventually o be put: The model saw gin, herefore, will consist of a series of aws, fixed on a central shaft, and aused to revolve, the teeth of the aws engage with the lint, and the ibres are carried round with the aws. To prevent the seeds being arried round also, the saws are arranged in the slits of a grating, called the ribs. The ribs retain the seeds while the cotton fibres are carried on through the spaces between the ribs to be removed later. Two auxiliary functions are required to complete this operation, one o present the bolls to the saws, and he other to remove the lint from he saw teeth. In the action of these several parts each has an important bearing on the cleanliness and the quality of the staple produced.

The manner in which the organs necessary for these operations are arranged may be represented by three circles placed in a straight line and each slightly intersecting its adjacent circle. The first will represent the box into which the bolls fall from the "feeder." This is called the roll-box, and in it the cotton, when it comes in contact with the saws, is rolled around the inner surface, the stripped seeds accumulate and eventually form a rolling mass of varying density. The ribs form the lower segment of the roll-box and through them project the saw teeth, or the circle of saw teeth intersect the roll-box circle. The second circle represents the circular saws. The third circle represents the brush by means of which the fibres of cotton are stripped from the saw teeth.

Although in actual practice the principles here described are elaborated somewhat, the mechanism is simple, the method of applying them or conducting the operations is one requiring far more care than is usually accorded them. The quality and cleanliness of the material, the density of the cotton in the roll-box, the speed of the saws, the condition of the teeth, and the effectiveness of the stripping of the lint from the saw teeth, all must be taken into careful consideration. Here-in lies the test of the kinner's ability, he cannot by any means remove all the trash from a badly "gathered" lot; he can, by care and the use of appliances at his disposal, improve a poor or medium quality and thereby increase the value of the lot, and also prepare a fibre more suitable for the requirements of the cotton spinner; he can, and too often does, decrease it in value and destroy any spinning properties the original cotton might possess.

Treating these points in the order in which they present themselves during the processes: in the plain, simple or single breast gin, it has previously been said, that the regulation of the quantity of cotton fed to the roll box is at all times under the control of the operator. It should be the object to keep the cotton in the roll box at a reasonable density. If this is increased the roll is pressed unduly against the teeth of the saws, to the damage of the staple, further with a tight roll any broken leaf or stem will be forced against the teeth and be carried through with the lint, instead of being carried away with the stripped seed as they should be and as would occur in the case of a light roll. More often than not the regulation is varied, not to suit the condition of the cotton, but to suit the speed of the baling, or the quantity of cotton going to the overflow, to be worked again. The average gin master having in view production as against quality, will keep a careful eye on the amount passing to the overflow, and will regulate the amount of cotton passing to the gin from that consideration rather than that of the density of the cotton in the roll box. If the cotton under process is the cleanest sample possible to be picked, this regulating of the roll will be necessary to produce a perfect staple, much more so in this the case with cotton of the average gathering.

In this respect the maker of gins has made many improvements in the methods of removing the seeds from the box and so tending to keep the roll light, but he has still a long way to go to prevent the misuse of the saw gin in this respect. With the object of removing any remaining hulls, stem and so on from the cotton before it reaches the saws there is provided an additional or outer breast to the roll-box. In this gin the cotton from the feeder falls into an outer box on to a spiked roller drum or roller that revolves rapidly, and is placed at the lower extremity of the ribs. The idea is that the boll is held by the saw teeth and carried upwards, while the spikes on the roller throw off the foreign objects not held by the saw, and the refuse is separated from the cotton boll. The cleaned cotton passes into the roll-box proper and is ginned in the usual manner. This style of gin is of comparatively recent introduction and is known as the huller gin. So much, however, has the harvesting methods deteriorated that almost every gin built today is on this principle, and has been necessitated by careless gathering of the crop. Even this can be tampered with by a careless workman, for it is quite possible to pass the cotton, at will, either through the outer breast as it should be, or to pass the cotton direct to the inner box without the intervention of the cleaning arrangement supplied. The attention to the roll-box both for cleaning and for density is of the greatest importance, yet we find it uncontrolled and entirely at the mercy of the most incompetent and careless of labor, and oftener than not without intelligent supervision.

The ribs have also an important function to perform, and the condition and the setting deserve consideration. The individual saws are arranged on the shaft alternately with collars, the latter corresponding to the ribs and the former to the spaces through which the teeth pass. The ribs should be set, so that the saw blade passes exactly in the center of the space between the ribs, that is, there should be an equal distance on each side of the saw blade. If this is not so the cotton will drag and break through the narrow space, while the wider one will allow the passage of more trash.

The saws have received much attention from the maker, and are constructed so as not to damage the fibre unduly. The teeth are curved on the back, designated a "roach back," and on the face they are carefully ground round, that is, with all edges removed. The maintainance of the latter condition is important. Resilient as are the cotton fibres, they will in time make an impression on the face of the saw teeth, and the sand present with the fibre increases the wear. How long a correct face can be kept on the face depends on many conditions, and not all the saws in one set will wear equally. A time for renewal or a grinding of the saws cannot be fixed, and it is useless to set a time, say, at the season end for the examination and renewal. Sharpening a set of saws, to do it in a proper manner, is not a work to be undertaken lightly, it takes time, and it wears the saw, it is therefore expensive. Changing a set of saws is not a serious matter, and if a spare set is changed, the new ones in operation cause little loss in ginning time, while more time may be expended on the grinding of the worn set. For this reason the best outfits have always one or more sets, kept ground, and in readiness, not for emergencies, but to supplement a periodic examination for defective saws.

Given a correct density of the roll in the box, a cotton freed from foreign matter, ribs correctly spaced, and the saw teth in perfect condition, the speed of the saw is a matter that can easily be regulated to suit the circumstance of length of staple, etc. There is more discussion about the speed of the saw than consideration of the condition of the cotton when it is presented to the action of the saw, and this is one of the mistakes of the ginner. By speed of the saw we mean just exactly the revolutions of that member, which is altogether a different proposition to the speed of the gin in terms of production, and represents only a minor factor. Undue or excessive speeds are to be deprecated, as they will injure the fibre most undoubtedly, but a saw run at undue speeds will quickly damage other things than the cotton fibre, not journals, slipping belts, breaking parts, etc. Any ginner who is capable of allowing a gin to be run above the speed at and for which it has been built is beyond redemption. Gin cut cotton is not a direct result of saw speed; it is the result of damp material in the first place, and is not cut (in a logical interpretation of the word) it is stringy and is due to the difficulty in getting through the ribs and to the adherence it will have to the teeth in stripping, whereby a collection of fibres may be carried round several times before being released from the teeth.

The ginner who is considering the cotton at all stages is not the man to slip on a purely mechanical proposition, and will be governed as to saw speeds by the class of cotton the staple, and the character of the season.

These notes have been written with a view to improving the character of the cotton so far as cleanliness goes, and give rise to hopes for better methods of harvesting and ginning. We are too apt to consider the cotton crop from the point of view of quantity and without regard to quality, with the result that an excess of production over consumption shows approximately 6,000,000 bales almost all of an unsalable description. The exact amount of this class of cotton in this country is so great that even Government experts cannot appraise the quantity.

Comparative Spinning Value of Card Strips and Low Grade Cotton

By SAM WAKEFIELD, Textile Engineer

The comparative market value of the two kinds of stock is perhaps at the present not a very accurate basis on which to argue the merits of the two materials, yet both are virtually on equal conditions, somewhat of a drag, and may justly be taken as indications. The present difference between grades established for deliveries in the New York market are:

Strict low middling 2.28 off 16.65—13.37 cents per pound.

Low middling 4.73—off 16.65—11.92 cents per pound.

Strict good ordinary 6.53—off 16.65—10.42 cents per pound.

Goor ordinary 8.15—off 16.65—8.50 cents per pound.

Waste prices are at present generally nominal, but a No. 1 white card strip of a good sample can most probably be bought at from 40 to 45 per cent, which is equivalent to 6.66 to 7.50 cents per pound, or at the most at 50 per cent equal to 8.37 cents.

Taking these figures as the factor which would first enter into the consideration, it would appear that the comparison should in all reason be based on the two "ordinary" grades and a fair white strip, but for practical purposes low middling may be included.

The machinery necessary to clean with any degree of success the low grades should consist of an opener either certical or horizontal. The former for preference, and connected with a bale breaker. In the lowest grade the use of an additional horizontal opener connected with a two or three blade beater will be none too much to remove the trash, and the cotton passed to the finisher lapper. The class of goods for which any of the cotton under consideration may be ultimately intended does not require or necessitate the use of an intermediate lapper, either for cleaning or additional doubling. In these machines will be found the difference in the loss between high and low grade cotton. The card will discard in strippings practically the same percentage from any grade of cotton from M. F. to G. O. in the same growth. In the card the motes and fly rejected will be of more importance, though in the preparation mentioned the difference may not amount to one and a half to two per cent.

The card strip has already undergone this preparatory cleaning process and the least possible opening carried on with it the better. There are practically only two processes necessary, one an opening pure and simple, without the use of the bale breaker and vertical opener, and the other the required doubling. The ideal preparation for this class of cotton used alone would be a hopper-feeder and horizontal "Buckley" opener forming a lap, and doubling on a finisher or lap machine. To put the strip through exactly the same processes as low grade raw stock, would at once destroy the larger part of the spinning quality, breaking up the fibre more and more, and tending to neps.

In the preparatory processes, therefore, is the greater opportunity for comparison: First, the fewer machines required, and second, the less loss. The most careful working of a low grade cotton will amount to (in invisible and visible loss) from 10 to 15 per cent in the opening alone, while the strips worked as suggested should not be more than 3 to 5 per cent, and the loss will be clean fly free from motes.

In the card, the saving in motes will be at the outside two per cent in favor of the strip, and if properly set the stripping of the card will be the same in both cases. On the question of the loss and quality of the strips produced from the two cottons, everything will depend on the suitable setting, and a suitable counts of wire, if possible to arrange, will materially aid the future working of the strip cotton. Both these for the reason that the work of the card as a cleanser is considerably reduced, and at the same time the retention of fibres is minimized as strippings.

A comparison of fibres at the card sliver may possibly show an advantage to the low grade cotton, but whatever advantage may be gained on this score is lost in the cleaner appearance of the strip. The absolute spinning properties of the two cottons will be in favor of the strip because of its cleaner condition.

The whole proposition depends on the method in which the stocks are prepared and the ultimate use of the yarn. There is no doubt that the strip will produce the cleaner yarn, and the strength will depend on the amount of beating the stock receives. In the case of raw cotton this must be great in order to remove the trash, and this will in proportion reduce the staple. The preparation at the lapper might even be reduced for the strip by eliminating the doubling and finisher, and putting extra doubling at the drawing frame. To get the best results from card strips the conditions must be carefully thought out, no cut and dried method of preparation will suffice.

Cotton Damaged.

New Orleans.—Approximately 1,200 bales of cotton were damaged by fire and 500 by water, as a result of the fire in the holds of the American steamship Calno, which raced into the Mississippi river early last Friday from the Gulf when members of the crew were unable to successfully cope with the blaze.

NATIONAL U.S.A. DYES

From Coal to Color

This progression calls for many **intricate and carefully worked-out steps** varying with each one of the **wide line of dyes** made by the

National Aniline and Chemical Co., Inc.

The interlocking of these steps in relation to each other so as to insure **satisfactory results** is the triumph of American chemists and engineers in the establishment of an **American Dyestuff Industry.**

General Offices

21 Burling Slip **NEW YORK**

New Yarn Department for F. Vietor & Achelis.

Perhaps the biggest shift in yarn ills, heard in the New York mar- t in some time, is contained in the nouncement by Frederick Vietor Achelis last week, of the inaugur- ion of a cotton yarn department, nnected with the T. Holt Haywood partment, at 65 Leonard street. his new department will be under e management of R. Means Bran- n, who will continue to represent e well-known Southern cotton rn mills with which he has been filiated for several years. The lls in question are:

Hamburger Cotton Mills, Colum- is, Ga.

Spartanburg County Mills, Spar- anburg, S. C.

Vivian Cotton Mills, Bessemer ity, N. C.

Indian Creek Mills, Inc., Lincoln- on, N. C.

John Rudisill Manufacturing Co., Lincolnton, N. C.

Helena Spinning Co., West Helena, Ark.

All of these mills, it is stated, are well equipped to make strictly first class yarns.

The entrance of Frederick Vietor & Achelis into the yarn end of the business, will undoubtedly be the subject of much comment. It will be interesting to know that this step is being taken as the only logical move that now seems possible in the way of expanding the business of the T. Holt Haywood Department. The colored goods business of the T. Holt Haywood Department, it was stated, has grown to the point, where some other channel was necessary in order to permit of further expansion. It is planned to make the yarn end of the business an important factor in the market and the intimation is that announcements of further progress may be expected right along. The store on Church street, adjoining the building occupied by the T. Holt Haywood Department, has been leased, and will be in order as the headquarters of the new yarn department, by Feb. 1, 1921.

An office in Philadelphia has already been opened for the new yarn department, to be in charge of Ben F. Corvin, who has been engaged in the yarn business in the Philadelphia market for the past 25 years.

A selling office in Providence for he distribution of these yarns, is xpected to be opened very soon.

The balance of the country will e covered by salesmen who will avel from New York City.

"Quickbilt Bungalows."

A new catalog of "Quickbilt" ungalows has just been issued by he A. C. Tuxbury Lumber Company, harleston, S. C. This is a neatly rinted and designed book beauti- ully illustrated and shows in detail he artistic bungalows built espe- ially for comfort, durability, beau- y, convenience and economy. This ompany owns its own forests and andles the material from the for- st to the customer. Every piece of aterial is cut to fit and a large art of the house is fabricated be- ore leaving the mill so that a large sum is saved in cost of erection and time, as it only requires two carpenters and two helpers ten to fifteen days to erect a five or six-room "Quickbilt" bungalow. These houses are made in the South and designed by Southern architects to meet the needs and desires of Southern people. Owing to their extensive facilities and the volume of material handled they are able to sell material for a home at the lowest possible figure. Their bungalows, which range from three to seven rooms, cost from $647.10 to $2,497.50. Large numbers of their houses were purchased during the war by the U. S. Housing Corporation, and many textile mills and industrial plants have entire villages of "Quickbilt" bungalows and others have enlarged their villages with these houses at a great saving. This catalog will be sent free to anyone contemplating building a home.

Raising the Standard.

"Raising the Standard" is the title of a neat little booklet just issued by J. Van Lindley Nursery Company, Pomona, N. C. This booklet shows a number of mills, mill vilalges, streets and houses which have been greatly beautified by the use of flowers and shrubs. Most notable among these are those made at the White Oak Mills, Greensboro, and the Erlanger Mills, Erlanger. The introduction to the booklet is in part as follows:

"Five or six years ago we tried to persuade mill managers and superintendents to beautify mill grounds. At that time we were sure that clean, well-arranged grounds would raise the standard of the mill, both in the eyes of its workers and in the opinion of townspeople not connected with it. We were sure that the substitution of flowering shrubs and shade trees for rusty machines and ash-heaps would be a paying investment, but we couldn't prove it. Our arguments were based upon a theory that had demonstrated its merits elsewhere—the theory that employees appreciate everything that is done for their comfort. But no mills had experimented along these lines at that time, and only a few of the more progressive ones were willing to attempt improvement.

"Now all that is changed. Executives who have improved the mill and factory grounds are enthusiastic over the success of the plan. They find that the standard of living has been raised; that the mill neighborhood has become better; that a new spirit has entered into their employees. The former shame or indifference of the mill operative (because of their work) has passed away, and in its stead has come a decided pride and loyalty. Employees are seldom loyal or disloyal without cause; with the knowledge that they are treated well comes a greater fidelity to the interests of their employers. Better factory grounds, with more shade trees for warm-day luncheons, and more flowering shrubs, for the enjoyment of all eyes, mean a more contented force.

"An interesting new feature of landscape planting is its applicability to community settlements. Planted as a unit ,such settlements can be made most beautiful; planted according to individual, untrained ideas the results are certain to be incongruous."

Small Turbo-Generator Sets.

The small Curtis steam turbine generating sets built by the General Electric Company are fully described and illustrated in Bulletin No. 42010-A, which supersedes Bulletin No. 42010. These machines have been successfully used for many years, under a great variety of service conditions, in stationery plants, for train lighting and on board ship.

These sets have a capacity up to 300 kw. Alternating current sets of 100, 200 and 300 kw. are equipped with 60-cycle revolving field generators, direct connected to the turbines and operating at 3600 r. p. m. The generators are intended to carry their full rated load at 80 per cent power factor continuously.

The larger direct-current generators of 100 to 300 kw. are driven by turbines through speed reduction gearing. The turbine operates at 3600 r. p. m. and the generator at 1200 r. p. m. The smaller direct current sets are direct connected and both turbine and generator run at 3600 r. p. m.

The 100 to 300 kw. generators are mounted on a common base with the turbine and gearing. The generators are wound for either 125 volts, 250 volts or three wire. The gearing is of standard General Electric Company design, and all parts are made by them.

Offers Suggestion to Overseers.

The time has come again when the superintendents and overseers have got to show their ability as overseers. During the past four years the management of help has gotten away from most of the mill men in the South, so now is the time to begin to train and teach them that the company's interest is the first step to their own prosperity.

In my experience as overseer for the past eighteen years, I find that superintendents and overseers are more or less responsible for the ability and loyalty of thir help. Cotton mill workers must have a leader to teach them to be loyal to the company they work for and to explain to them that they cannot succeed unless they are loyal to the mill owners and are willing to do an honest day's work.

How many superintendents and overseers do this except in North Carolina? It is very important that they should get in the habit of doing this. It is the little acts of disloyalty that hurt the company and ultimately does the help more harm than the help or overseers.

It is up to the overseers and superintendents to teach the help to see thse things clearly. When they do this they will have accomplished a whole lot toward the success of the help and the happiness and prosperity of the employes.

Yours truly,
J. A. H., Georgia Overseer.

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(With One Exception)
WERE LUBRICATED WITH

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UNITED STATES PATENT OFFICE
SPECIAL TEXTILE LUBRICANTS

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A significant fact for the mill man:—

That the newest and most modern looms should be lubricated with NON-FLUID OIL, the modern lubricant at a time when it was desired to have them make the best showing.

In this modern age, fluid oil should be as obsolete as the hand loom. It drips and spatters all over, damaging goods in advanced stage of completion, wasting time in oiling and doubling the cost of lubrication.

NON-FLUID OIL stays in bearings, being adhesive—putting an end to spoilage—lubricating without waste of lubricant—and actually giving **better lubrication at less cost per month.**

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effort in standardizing their products and process of manufacture, often overlook the question of standardizing their facilities for handling work in process, raw materials, and waste.

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President Fitzgerald Comments on Industrial Democracy

The industrial democracy system which has been in effect at the Riverside and Dan River Mills, Danville, Va., and the Durham Hosiery Mills, at Durham, has attracted a great deal of interest from mill men all over the South. Interest has been quickened lately by the announcement from both these mills that the operatives had voted to reduce their pay and to curtail production.

Opinion as to the value of the industrial democracy system has varied greatly, although officials and employes of both these mills have repeatedly stated that the results were excellent. A press dispatch from Danville recently carried the interesting information that Organizer Dean, of the Textile Union, who had gone to Danville to address textile workers, stated that the "union was getting sick and tired of coming to Danville to help unionize" because of the poor results. An organizer, Dean said, had been there two months, but had accomplished very little. This in itself is no small recommendation for the industrial democracy system.

The opinion has been frequently expressed that industrial democracy depended upon prosperity for its success and that under adverse conditions in the textile industry, it would not work. Believing that its readers would be interested in first hand information on the success of industrial democracy during the present conditions in the industry, the Southern Textile Bulletin recently wrote President H. R. Fitzgerald, of the Dan River and Riverside Mills, asking him for an expression of opinion concerning the recent action taken by the employes of his mills in voting to reduce their wages. Mr. Fitzgerald's reply follows:

"We duly received your recent letter inquiring as to the wage reduction just voted on by our operatives through the House and Senate.

"It is but fair to state that this revision of the wage schedule did not originate with the operatives, but was suggested by the management when we felt it was necessary and proper that such a revision should be made.

"As is well known, wages in all industries had reached an abnormally high point and as these advances were made to our people they were advised that the high rates could be maintained only so long as conditions justified it, and as the depression has continued from time to time they have been advised of conditions. Quite a number of our people expressed themselves as really expecting a reduction in September after the first drastic decline in the price of cotton goods; they have evidenced a very fine spirit through it all and our desire was to do the very best we could for them at all times, and not feeling the necessity for such a step at that time we told them we would delay it just as long as could possibly be done.

"However, when the additional decline occurred early in November and after the deflation had affected various items of daily necessity we felt that the economic situation demanded a revision of the abnormally high wage scale that had been reached. Therefore, we first called together the officers and committee chairmen of the House and Senate and frankly laid the entire question before them, stating that we desired to adopt such a plan as would make it as pleasant and easy for our people as possible. This special or joint committee decided to call a joint session of the two bodies for the purpose of laying the same data before the full membership; this was done and a bill offered providing for a 25 per cent reduction in the base rate, and it immediately received practically the unanimous endorsement of the joint bobdy. When the regular bill came before each body in separate session the House proposed a slight amendment by providing for the elimination of the 10 per cent premium for full time and took care of the additional amount by a 15 per cent reduction in the base rate, and with these slight modifications the amended bill was promptly agreed to by the Senate and Cabinet.

"At the final passage of the bill in the House on its third reading there were only six votes against out of a roll call of over one hundred, and there has been manifested a very fine spirit throughout the entire plant with absolutely no labor trouble. In this way our people have and are continuing to prove that industrial democracy works not only to increase wages, but to reduce them when the necessity arises and they understand the reason why.

"Of course we are not prophets and cannot tell what the future has in store for us, but for the well being and prosperity of our operatives and their families we very much hope that we will be able to keep our mill running full time, for we realize that they are most happy and contented when the spindles and looms are running."

Miller Cotton Mill.
Waco, Texas.

W. D. Ingle	Supt.
J. W. Fowlks	Asst. Supt.
J. W. Fowlks	Carder
O. C. Tuctle	2d Hand Carding
J. W. Fowlks	Spinner
Claud Weire	2d Hand Spinning
J. W. Fowler	Slasher
Willie Morgan	Warper
W. M. Miller	Weaver
Tom Niles	2d Hand Weaving
C. L. Lanford	Dyer
H. C. Hensley	Master Mechanic
F. C. Ledenham	Cotton Grader

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Powers Regulator Company in New Building

The Powers Regulator Company f Chicago recently moved into heir new fire-proof factory build-g which has been under construc-on for more than a year, the un-ward conditions in building and aterial lines having greatly re-rded its completion.

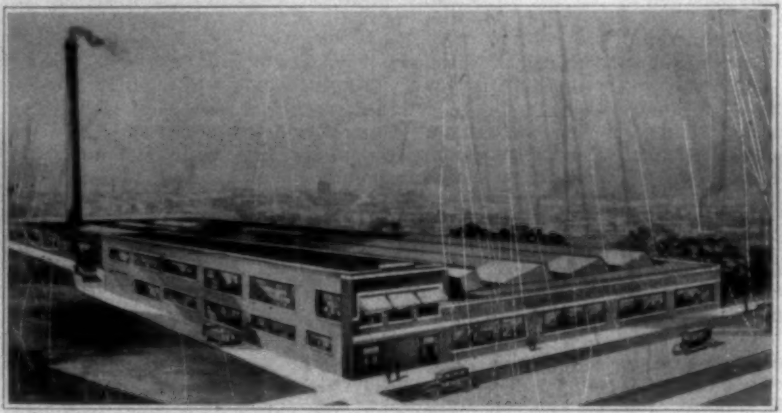
In connection with this move, it interesting to review the pro-ess which this concern has made its little more than thirty years existence.

Beginning in 1890 in the small oom 12 x 16 feet in size, they have rogressed steadily. The first de-ices ever made in Chicago for reg-lating heat in residences were urned out from this little shop, nder direction of W. P. Powers, ounder and president of the com pany. His factory force at that ime consisted of Henry Van Good-nover who is still actively engaged n the production work of the com-pany.

They soon outgrew this space and rented about eight hundred square feet in a machine shop where they began to do there own machine work. In 1893 they again expand-ed to four thousand square feet in the same building. Soon after they acquired an office in the down town district and from there began op-erations in school buildings.

In 1895 they brought out their first thermostat controlling with air pressure.

About fifteen years ago they purchased the building in which they made their humble beginning. In this building they occepied about eight thousand square feet, renting the rest of the building. During the last seven or eight years they developed their line of heat regulating specialities requiring more and



more room for satisfactory production until a new factory became absolutely indispensable.

This new factory gives them forty thousand square feet of floor space for manufacturing and office purposes. It is located on the north west side about four miles from the loop and is a rectangular building one story high of fire proof construction. Adjoining the factory building is a two story brick, accommodating the office of the company on the second floor and the first floor provides for the space for employes, locker room, and toilet roms, shower baths, etc., an interesting feature of which is the wash sinks and shower baths supplied with warm water through the Power Steam and Water Mixer, a device which provides warm water always of the desired temperature, requiring one line only, the cold water and live steam being mixed and controlled by a thermostat. Opening the faucet or the shower head, automatically sets the mixer in operation, providing a supply of properly tempered water absolutely safe against scalding.

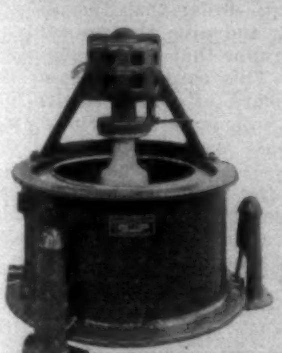
The business of this company was for many years confined almost entirely to regulation of living room temperatures but it became evident that there were a great many industrial processes involving the use of heat where their methods of automatic control would be desirable for many reasons, and it was to meet this need that they developed their Specialties above referred to.

One of the first propositions which claimed their attention was a battery of four dry kilns used by the Lyon & Healey Company of Chicago for drying hardwood lumber. Under the system of hand temperature and humidity control then in use it was requiring approximately thirty days to dry a kiln of green oak lumber of certain dimensions.

The Powers Regulator Company undertook to improve this condition, with the result that they developed and applied an automatic regulator which permitted heating the kiln to an exact schedule, and secured the amazing result of a kiln full of properly dried lumber in less than two-thirds of the time formerly required, with a considerable improvement in the quality also. It was discovered that once the temperature in this kiln was properly established and maintained, the control of the humidity which was accomplished by steam sprays, became very greatly simpli-

(Continued on Page 29.)

HYDRO EXTRACTORS



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Water—Its Uses In Textile Industry

(By C. C. Harding, of Chattanooga, Tenn., prepared for but not delivered at Southern Textile Association meeting at Greenville recently).

It is mommonly conceded in the textile industry that there exists a real necessity for the "right" kind of water—water that is clear, free from iron salts, water absolutely soft—and that, other things being equal, the highest grade of textile mill product can only be produced when such water is used. It is significant to add that mills operating with such water do so much more economically than others using water from which the mineral impurities have not been removed. This ideal water is rarely found in nature, it, however, can be cheaply produced artificially, and there exists apparatus that has proven its ability to unfailingly supply textile mills with this important adjunct.

The dissolved salts in water which are harmful in textile processes are the salts of lime, magnesia and iron. The suitability of any water for textile purposes is in inverse proportion to the lime, magnesia and iron present—the more of these, the less suitable is the water.

Thus it happens that the great textile centers of the world were originally located in those favored spots where clear, soft water was to be had. However, the density of subsequent population with its accompanying pollution of water supplies changed all this and today virtually all textile mills confront the necessity of artificially obtaining such water.

Formerly a water of, say, three to four degrees of hardness could not be treated because the so-called lime-soda process, the only one then known, could not produce a water softened below that point. Millions of gallons of such water are now being softened annually by the Zeolite process in textile mills.

The soap-destroying property of hard water may be regarded as the basis of almost all the trouble caused by it in textile mills. The initial step in almost every case in the handling of silk, cotton and wool involves the use of soap in boiling off or scouring. In that initial step hard water will produce effects the result of which will be felt even after the fabric is in the hands of the ultimate wearer.

When soap is added to water containing lime and magnesium, the lime and magnesium combine with the fatty acids of the soap, making oleates and stearates of lime and magnesium which are insoluble and extremely sticky curds. These curds falling on the fibers, yarn or fabric form so-called soap spots which can never be washed off, give a harsh feel to the goods, and are the direct cause of spotty dyeing and lusterless finish.

The turning out of uniformly high-class goods is a practical impossibility where the water available for the process contains even only a very small degree of hardness. Hard work and eternal vigilance will keep the quantity of goods spoiled by uneven dyeing and the other ill effects of a hard water, at a minimum, but will never completely eliminate this loss. Hence the mill, for the sake of the quality of the product as well as for the economy in operation, must have the softest water possible for every step of the process.

First consider the disadvantage of untreated water in your boilers—because all, or most of you, operate boilers.

All natural untreated waters will deposit scale of some sort, which may be thin or thick, soft or hard, according to the nature of the water and the conditious under which the boilers are operated. Thus, scale of any kind whatever, even in the form of sludge, is a source of danger in the boiler room, apart from its causing needless maintenance items such as boiler cleaning, tube replacements and boiler repairs. But more important this scale or sludge is directly responsible for large wastage of fuel—the common consensus of opinion is that one shovel out of four is saved in boilers that are fed with non-scaling water.

Where boilers contain scale, sooner or later the scale, if not frequently removed, will crack, and through these cracks water enters, where under heat and pressure, it decomposes the salts in the water and possibly the scale, freeing acids, such as hydrochloric and sulphuric, which quickly attach the boiler metal, forming what is known as corrosion, whose destructive influence is unfortunately known to many of you.

The most dangerous salts in boiler waters and magnesium chloride and nitrates. The later are not very common, but the former is, and, contrary to the general ideas, chlorides of calcium and sodium are of little danger since they do not easily decompose, but in the case of magnesium chloride, care must be taken to see that neither scale nor sludge is allowed to accumulate, as corrosions usually take place when such is present.

Scale should be prevented by doing the necessary treatment of the water outside the boilers. The Zeolite softener is offered as an unfailing solution of this problem, since its delivery is water containing no calcium and magnesium salts.

It may interest you if I give a short account of this very interesting process. The Permutit process, unlike other processes, is one of simple exchange without precipitation. There is put into the softener shell an insoluble material of a very porous nature known as sodium-aluminate-silicate, a zeolite, which has the property of exchanging its sodium base for other metallic bases, as, for instance, calcium and magnesium, the scale-forming matters in water. These are completely extracted from the water in its passage through the zeolite and in their place a corresponding amount of sodium goes into the water, by which you will see water containing scaling matter, will after passing through a "Permutit" softener, contain nothing but soluble salts, thus making it impossible to form any scale where such water is used in a boiler.

No doubt you will ask, does this go on forever? To which I will answer, No. Like all of us, the softener requires food, and the food is common salt, which is the cheapest material at present obtainable to answer the purpose. The feeding is simple, requiring no skill. All that is necessary is to make a solution of salt in water, pass this brine through the softener upwardly, and it is again ready for use, and this process more fully, let us suppose a boiler plant is running for 12 hours, then the process will consist of one softener, arranged to treat a given number of gallons each hour for 12 hours. During this time and while the softener is working, the attendant will put the necessary quantity of salt in a tank, which will dissolve by itself in the cold water and be quite ready for use when the 12-hour working day is over. The attendant will run the brine into the softener and later washes out the softener, thus re-creating the original condition of a sodium-aluminate-silicate, the scaling matter which was originally in the water is washed out of the softener as soluble chlorides and passes off to a drain.

It will be understood by this that the composition of the water thus treated is not changed beyond the removal of scaling matter and the substitution of soluble salts. This process is practically fool-proof, requiring no chemical control or skilled attention of any sort. It occupies little space and always produces zero water, water of no hardness.

Let us now examine some of the applications of soft water to various manufacturing processes.

Silks of all kinds processed with soft water, whether in the piece or in the skein, are delightful to the feel and beautifully, evenly and brilliantly dyed, thus commanding a favored position in the market.

In working silk before winding it is subjected to a soaking process in a strong solution of castile soap and neat's-foot oil to give it the necessary softness and pliability for the winding operation. If the soaking solution is made in hard water, the lime soaps are precipitated in it and mat the fibers, making them exceedingly difficult to wind. A zeolite softened water, absolutely free from lime and magnesium, on the other hand, produces perfect saponification and penetration of the soaking solution. The silk yields readily to the soft water and comes from the solution in a well-preserved state of pliability. No lime soap specks can be formed to stick to the fibers and afterwards cause the silk to reharden. Finally, such water will materially quicken the soaking process.

In the degumming, or boiling off, soap again enters in the process, with the important difference that boiling off calls for greater quantities of soap and water than the soaking. Consequently, all of the ill effects of soap dissolved in hard water are intensified in the degumming operation. The danger from soap specks is much greater in that the precipitated lime soap sticking to the silk frequently first discolors it, then partially decomposes and finally often causes the silk to crack.

There is an average of 50 per cent saving of soap when soft water is used and this is practically irrespective of the water's original hardness content.

The precipitation of the lime soap on the silk renders the goods harsh to the touch. Zero water on the other hand leaves the goods delightfully soft to the touch. The proper hand and luster is imparted in the processing of piece dye silks only when an absolutely soft water is used.

The extremely harmful effects of the lime soaps, due to hard water, which adhere to the silk in spots and streaks are pronouncedly felt in the operation of weighting the silk. The stick lime soap prevents the weighting solution coming uniformly into contact with the silk. Wherever the fiber is overlaid with the lime soap the tin cannot fasten itself to the silk, which causes the "hungry spots" that make the dyer complain, and rightly, too, for since the tin acts as a mordant or fixative the "hungry spots" will always show up duller than the rest of the fabric, and give the unevenly dyed appearance that is the bane of every dyer. This cause of uneven dyeing disappears, of course, in dye houses using soft water, which is free of the least tract of lime and magnesium.

Not the least of the objections to the use of hard water in weighting is the actual loss of tin that always occurs when the silk has been processed in water containing lime and magnesium. The curdy deposits on such silks are, as has been already pointed out, oleates of lime and magnesium.

Cotton bleachers and dyers preference for soft water for their processes is shown by the location of the bulk of bleacheries and finishing mills in New England, where comparatively soft waters abound, instead of in the South, where, although many spinning mills are to be found, bleacheries and dye houses are not so numerous.

The first operation of cotton bleaching, boiling off, requires soft water for very much the same reasons that soft water is used in stripping silk. The resin soap used for the preliminary boiling where the lime boil is used, reacts like other soaps with the lime and magnesium salts in a hard water. However, instead of making stearates or oleates of lime and magnesium, as do the other soaps, resin soap makes resinates of lime and magnesium, which are just as insoluble and even more sticky. These resinates precipitated on the cotton yarns or cloth give rise to the same kinds of troubles as the soap on silk. The finish of the goods is deteriorated and satisfactory dyeing or printing subsequently is made difficult.

The effect of boiling cotton with alkali is to remove the pectic acid, the fatty acid, part of the cotton wax, and the bulk of the coloring matter, it also swells up the motes (pieces of cotton seed). The bleach destroys the coloring matter and the sour dissolves the lime salts and any other mineral such as iron stains.

When hard water is used in the alkali boil, the fatty acids form soda soaps with the soda, and the lime in, the water immediately forms lime soaps which precipitate on the fiber. In the bleach, the lime soap is changed to a fatty acid which combines with the hardness in water forming lime soap again which remains in the goods. Bleachers frequently use a second kier boil, sometimes before and sometimes after bleaching with the object of removing the fatty acids still remaining in the goods. Soft water precludes the necessity of more than one boil, thus saving that expense.

Lime, caustic soda, soda ash and silicate of soda, the chemicals most frequently used for the boil-off, all react on the magnesium and lime salts in the raw mater, causing their precipitation in the kiers as hydrates, carbonates or silicates. It stands to reason that an excess of chemicals, over and above that required for boiling off the cotton, must always be put in the kiers with a hard water. When soft water is used there is no such waste and the cost of boiling off is reduced accordingly. In addition no insoluble unremovable lime soaps are formed when boiling-off is done in zero water.

The presence of the precipitated carbonates and silicates of lime, which are inert as far as the boil-off is concerned, is far from beneficial to the process, and increases the souring required subsequently. Too much souring is harmful in that it tends to tender the fiber.

In mercerizing, the chemicals used, strong solutions of caustic soda or of zinc or cuproammonium, also cause the precipitation of the lime and magnesium salts in the same manner as already described as taking place in the kiers. Rapid and even penetration is an impossibility when hard water is used.

Water enters so largely into practically every step of the process of manufacturer of woolen goods that the character of the water supply becomes the most important single factor in the production of woolens. Woolens of the highest class cannot be produced with waters of even comparatively little hardness, so that the quality of the product of any woolen mill is very definitely governed by the quality of the water available.

The faultless scouring of wool is the kenystone of the entire process of manufacture of woolen goods. When a water containing lime and magnesium is used in scouring, the gray-colored oleates formed by the soap destroyed in such water cling to the fibres giving a dingy, dirty appearance to the wool and imparting to it a sticky feel, which is injurious in all subsequent operations.

The soap-destroying effect of a hard water used in scouring greatly increases the cost of the process. Fine qualities of wool are best

(Continued on Page 30.)

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New Check for Picker-Sticks

David N. Hunt, of Atlanta, Ga., has invented certain new and useful improvements in checks for picker-sticks, of which the following is a specification.

The object of this invention is to provide a construction whereby the picker stick used in looms may be properly arrested at the opposite ends of its stroke. This requires that the arrestation be made without any torsional tendency upon the stick, and that the motion possessed by the stick be gradually arrested and the stick brought to rest at a fixed point on each stroke, for the shuttle should be sharply delivered by the stick before any twisting movement has taken place in the latter, in order to prevent defects in the weaving ,and to permit the use of an open shuttle box, and that the stick itself should be brought gradually to rest at a fixed point, without twisting to prevent strain on the stick, and to prevent the lengthening at the successive strokes of the picker. For these purposes, the invention consists in a sliding frame in which the picker stick vibrates, the frame being provided with abutting stops to fix a positive limit of movement for the picker stick, and being provided with friction devices by which its sliding motion is controlled, in such a manner that an increased retardation is afforded to the frame as it reaches the end of its movement under the driving power of the picker stick as the latter aproaches the end of its movement, the mounting of the frame being such that it is caused to move in a straight line without twisting or warping, whereby the checking of the picker stick is effected without twisting of the latter. It further consists in the construction, arrangement and combination of the several parts of which it is composed, as will be hereinafter more fully described and claimed.

Figure 1 is an elevation of a portion of a picker stick, and its frame constructed in accordance with this invention.

Figure 2 is a section through the picker stick frame.

Figure 3 is a section at right angles to the section of Figure 2.

A block 1 has its one end secured to a lay 2 of the loom, being so shaped as to properly fit thereon, it being fastened thereto in any suitable manner as by a bolt 3. A transverse channel 4 is formed in the forward face of the opposite and projecting end of such block, in which channel is mounted, with a sliding, fit the bar 5. By preference the block 1 and bar 5 are made of suitable wood ,such as hickory, although other materials having the desired properties may be used. As will be seen from Figure 2, the bar 5 has its forward face struck in an arc so that the htinnest portion of such bar is in the center. The bar itself is provided at its middle portion with a slot 6 arranged lengthwise of the bar, suitable buffer blocks 7 being inserted in the ends of the slot.

The bar is held in the channel 4 by a cap 8, preferably of metal which is drawn toward the forward face of the bar by a bolt 8a passing through the slot 6 and the block, and by a spring 9 on the rear end of such bolt, a friction washer 10 preferably of leather or fiber being interposed between the bar and the cap. By this construction, the bar is permitted to slide lengthwise in the channel and in order to prevent its binding at the ends of such motion, the shoulder formed by the head of the bolt 8a is arc-shaped as at 11, and the recess in the cap is of corresponding shape to afford a rocking connection between the cap and bolt, the curvature of the cap corresponding generally to the curvature of the forward face of the bar. A nut 12, preferably having a handle 12a, is provided to adjust the tension placed upon the spring 9. This nut may be castellated and when proper adjustment of the spring is secured, may be locked in angular position by a cotter pin 13. It will be understood that the adjustment of the nut and the adjustment of the tension of the spring effected thereby, affords a means for adjusting the frictional resistance offered to the sliding movement of the bar in the block, and that this resistance increases toward the ends of the movements of the bar. due to the arc-shape given to the bar.

Mounted in front of the bar, is a strap 14 of any desired material, but preferably of metal. Angular (shown as rectangular) buffer blocks 15, preferably of rubber, are interposed between the ends of the bar and of the strap, being held in place by bolts 16 which also serve to hold the strap in place.

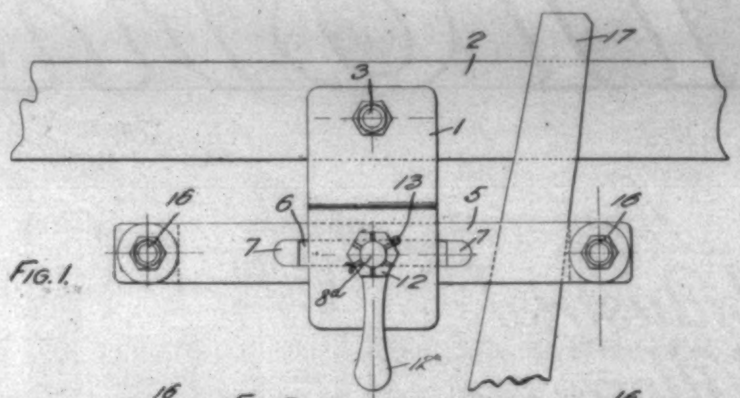
FIG. 1.

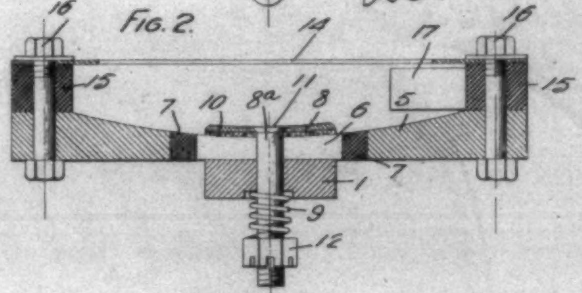
FIG. 2.

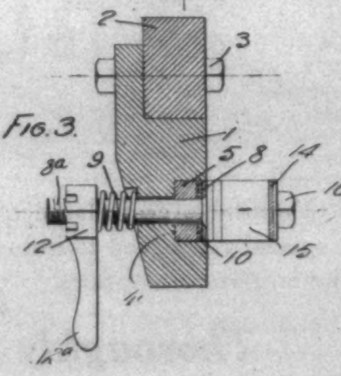
FIG. 3.

The picker stick 17, driven in any suitable manner, plays behind the strap 14 and in front of the bar.

It will be noted, with the bar at one end of its movement, in which position it has been left by a motion of the picker stick in the same direction ,that, as the picker stick approaches its limit of movement in the other direction, it contacts with the corresponding buffer block 15, and starts the bar in motion toward its oposite limit of movement. This movement of the bar will be resisted by the friction attendant on the motion of the bar in the channel of the block 1, due to the pressure upon the sliding parts created by the spring 9. As the bar approaches the end of its movement, this resistance will be increased by reason of the increased tension placed upon the spring due to the concave face of the bar. This results in a gradual increase of resistance to the movement of the picker stick, and the latter will be finally arrested by the contact of the buffer blocks in the channel 4 with the bolt 8a.

Considering the resistance offered to the movement of the bar, the picker stick will, on contacting with the buffe rblock 15, have its velocity somewhat reduced. and the shuttle will be sharply delivered at the time, after which the picker stick will continue its motion, carrying the bar with it, it being slowed up at the end of the stroke and finally positively arrested as before described.

It will be noted that in any event, the resistance to movement of the picker stick is transmitted to the latter through the contact of the stick with a face substantially at right angles to its line of motion, whereby torsional strains on the picker stick are prevented; that the stick is not restrained by the frame in regard to its movement at right angles to the length of the bar, and that the var is guided for rectilinear movement in the block 1. Therefore, in arresting the motion of the picker stick, it is not subjected to side strains tending to twist it or to cause it to wabble in the plane of its vibratory movement, which is of importance. It will be further noted that positive stops are provided for the picker stick, and that these stops are separate and distinct from the means for retarding or slowing down the movement of the stick, and that the latter means may be adjusted without affecting the positive stop limits, the positive stops being formed by the buffers.

The buffer blocks 15 receive the initial shock of the picker bar, and are the parts most subject to wear, and by making them angular when one face thereof has been battered, they may be shifted through a given angular movement, and a fresh face presented.

It will be obvious that a check such as before described may be by variations of proportions and sizes and of parts may be applied to the several variety of looms, without departing from the essential features of this invention.

Outlook Brighter for Gaffney Cotton Mills.

Gaffney, S. C., Dec. 5.—The outlook on the p art of the various cotton mills of Gaffney is more encouraging now than it has been for some time. A number of inquiries have been received recently by the mills which indicates that those who have been out of the market for several months are preparing to buy, and several of the mills have made substantial shipments during the last week or ten days. If the situation continues to improve the mills of Gaffney will be a boon to the operatives.

Any mother is old-fashioned to a sixteen-year-old daughter.

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Weave Room Calculations

By W. A. Graham Clark

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THURSDAY, DECEMBER 9, 1920.

Welcome to the Carders.

Charlotte welcomes the Carders and is glad that the first sectional meeting is being held in the city in which the Southern Textile Association was organized.

At the time of writing this welcome, notices have been received from about sixty superintendents and overseers stating that they will be present, and it is estimated that the attendance will be well above one hundred.

The backbone of cotton manufacturing is carding, for no matter how good the spinning or weaving may be, they can never entirely overcome defects in carding.

On the other hand, good carding will do much to produce good spinning even on poor spinning frames and to improve the weaving of deficient weave rooms.

In spite of the well known importance of carding, and its effect upon the other processes there is a great difference of opinion upon matters pertaining to card rooms and in very few instances is there reliable information or data upon which to base such opinion.

One man says that a draft of 100 on cards will give best results, while another says 125 draft will produce stronger yarn. One man claims the best results for one process of drawing, while another says two processes are better, and yet they can rarely back their claims with statements of comparative results.

In the steel industry a man claims that a certain mixture will produce a stronger steel, while another mixture will produce a steel with a smoother finish.

Every such claim can be backed with statements the chemical analysis of each mixture and by the records of many hundreds of accurate and scientific tests.

From the standpoint of really knowing what results will be produced from certain settings, drafts or twists or other textile facts the cotton manufacturing industry is many years behind steel and other industries.

The only guide that we have is the opinion of successful practical mill men and as opinions differ even among the successful men it is best to be guided by the opinion of the majority.

Believing that much good will result from an exchange of ideas by practical carders, the Southern Textile Association has called this meeting of the carders and we expect that much valuable information will be secured.

There will, of course, be a considerable difference of opinion upon many phases of card room work but, in spite of radical ideas, the opinion of the majority will as a rule be found the more nearly correct.

The growth of the textile industry of the South depends upon the efficiency of the employees and more particularly upon the efficiency of the superintendents and overseers.

Meetings of such men as compose the Carders' Section of the Southern Textile Association will do a great deal to improve the operation of our mills and we anticipate an instructive and interesting meeting.

Size of the Crop.

It does not make much difference whether the present cotton crop is 12,500,000 or 13,000,000 bales, for in either event there is enough to go around. The real questions are how much will the mills buy and how much will the farmers hold?

While the size of the crop is a factor of small importance it is interesting to speculate on same.

The amount of cotton ginned to Dec. 1st for the past four years has been:

To Dec. 1, 1917......	9,713,000 bales
To Dec. 1, 1918......	9,571,000 bales
To Dec. 1, 1919......	8,844,000 bales
To Dec. 1, 1920......	10,145,000 bales

The amount ginned after Dec. 1st for the past three years has been 1,535,000, 2,335,000 and 2,481,000 bales respectively. If we add the smallest and largest of these figures to the 10,145,000 bales ginned to Dec. 1, 1920, we find that the 1920 crop should be between 11,680,000 and 12,262,000 bales.

The bears point to the lateness of the season as indicating large ginnings after Dec. 1st, while the bulls point to the splendid weather this fall as indicating an unusually large per cent of the crop has been ginned.

It is interesting "dope" but bears a very small relation to the course of the price of cotton.

Reports Big Orders Coming to Cotton Mills.

Greenville, S. C., Dec. 3.—Cotton mills in Greenville and other big industrial centers of the South, which have experienced stagnant business several months, are beginning to receive substantial orders that will enable them to resume full operation after December, according to a statement issued today by W. J. Thackston prominent manufacturer, based on reports he has received from leading manufacturers of the South and commission merchants.

Spbstantial orders for cloth that have come to Southern mills in the past few days is said by local manufacturers to be responsible for the slight improvement in the cotton market. One manufacturer announced today that he had received and accepted orders for print cloth that would enable him to run his plants without curtailment of hours, but with a reduction of wages to something like normal. Another large manufacturer said he had some orders in hand which he could supply from goods already made from high priced cotton, that would show considerable loss, but the prices would be an even break on present prices of cotton, and lower wage costs.

As to the cotton situation, a special committee of the state manufacturers' association today received a letter from United States Senator Dial, who reported that "there is a tremendous demand for cotton if the foreign parties desiring it could furnish the security."

Senator Dial said he"had a call from a delegation yesterday from one country and they want to arrange to get three hundred thousand bales of cotton. They offered mortgages on their mills, he said, with endorsements of banks, quaranteed by the government to agree to hold the cotton in trust to pay the debt."

S. B. Tanner Considers Situation Hopeful.

S. B. Tanner, Sr., of Charlotte, N. C., head of a large chain of mills, said that "anyone might consider the general situation very hopeful, though, I expect it is true we have no way yet of determining whether the tide has definitely turned. Quite a number of mills are reporting receipt of a few more orders, some of them substantial. This fact offers some reason to believe there will be gradual renewal of the demand for textiles. The general situation, however, is one which impels the mill owners to continue to exercise the greatest caution in their actions. A further tightening up in the cotton holding movement will do much to bring about an early return of stable business conditions."

Cotton Goods Exports in Canada Show Increase.

Montreal, P. Q.—The Canadian textile industry had a very good year during 1919. Official figures show there were 27 plants in operation, of which 12 were in Quebec; 11 in Ontario, three in New Brunswick, and one in Nova Scotia. Quebec is the center of the industry. Of $58,732,941 invested in it, $37,962,311 is to be found in this province. Ontario comes second, with $13,632,84; Nova Scotia, $4,636,587; New Brunswick, $2,501,179. Distribution of capital is as follows: Land, buildings and fixtures, $14,016,973; machinery and tools, $21,200,219; materials, stocks in process, finished product, and miscellaneous, $12,022,193; cash, trading and operating accounts, $11,493,556. Number of persons employed is given at 16,124; wages and salaries paid during the year, $10,981,091; of employes, 7,405 are female, and 8,719 male; cost, at mill, of material used during year was $43,816,517; the value of the year's product at the mills was $82,642,94.

The growing importance of the industry is seen in the increase of exports of cotton goods during the last seven years, returns being for fiscal periods; in 1913, the value was: $124,551; 1914, $130,196; 1915, $506,907; 1916, $1,815,846; 1917, $21,181,116; 1918, $2,620,095; 1919, $6,492,205; 1920, $6,148,697.

Personal News

R. L. Poovey is superintendent of Parla Mills, Statesville, N. C.

W. R. Coggins is superintendent of the Inverness Mills, Winston-Salem, N. C.

J. D. May is superintendent of the Rodman-Heath Cotton Mill, Waxhaw, N. C.

L. M. Culbreth is superintendent of the Corley Mills, Inc., Cumberland, N. C.

C. D. Webb, has resigned as supedintendent of the Edenton Hosiery Mills, Edenton, N. C.

N. B. Cloniger, is superintendent of the Arkray Mills, Inc., Gastonia, N. C., which is now under construction.

J. B. Scott has been appointed resident manager of the Pelham (Ga.) Cotton Mills.

A. L. Whetstone has resigned as superintendent of the Hampton (Ga.) Cotton Mills No. 1.

H. F. Woodyard has been appointed spinning overseer at the Union Mills, Lafayette, Ga.

B. H. Maynard has been appointed second hand in spinning at Union Mills, Lafayette, Ga.

M. E. Wall has been promoted from carding overseer to superintendent at Hampton (Ga.) Mills No. 1.

T. M. Plonk has resigned as superintendent of the Sadie Cotton Mills, Kings Mountain, N. C.

M. T. Poovey is now the superintendent of the Gastonia Manufacturing Company, Gastonia, N. C.

C. K. Torrence is located at Gastonia, N .C., and is superintendent of the Ozark Mills.

A. E. Cline is now superintendent of Bonnie Mills, Kings Mountain, N. C.

J. P. Chester was recently appointed superintendent of Steele Cotton Mill Company, Lenoir, N. C.

C. L. Stirewalt is superintendent of John Rudisel Manufacturing Company, Lincolnton, N. C.

C. L. Payne has been appointed second hand in spinning in No. 1 Mill at Crown Cotton Mills, Dalton, Ga.

J. W. Fermander, frm Griffin, Ga., has accepted position as overseer of spinning and winding at Hampton Cotton Mills Hampton, Ga.

W. B. Cash has resigned as overseer of weaving at Chesnee Mills, Chesnee, S. C., and is now located at Union, S. C.

C. L. Boone, formerly second hand in weave room at Elmira Cotton Mill, Burlington, N. C., is now overseer of weaving at Lone Star Cotton Mills, San Antonio, Texas.

S. P. Bland has resigned as overseer of weaving at Holt, Gant and Holt Mills, Elon College, N. C., to take charge of weaving, slashing and drawing-in at Glen Raven Cotton Mills, Glen Raven, N. C.

M. B. Summer, for a number of years auditor of the Union-Buffalo Mills Co., Union, S. C., and for the last year a government income tax collector, has become associated as business manager with the Textile Institute, Spartanburg, S. C.

W. N. Wylie Dead.

W. M. (Harry) Wylie who was at one time connected with the Whitin Machine Works, Whitensville, Mass., died at his home in Rock Hill, S. C., last Friday.

Kills Fellow Employe in Mooresville Factory.

Statesville, N. C.—A homicide occurred last week at Mooresville, Hoyt Mercer, aged about 18 years, having shot and killed Berry Rhinehardt, aged 28. The participants in this homicide were employes of the Mooresville Cotton Mills, and the tragedy took place in the weave room.

It seems that the two men had some words during the morning and in the afternoon young Mercer walked into the room where Rhinehardt was at work and shot him twice with a .22 rifle, the first bullet taking effect in his neck and the second in the back as the wounded man started to run. Immediately after the shooting Mercer left the scene with his rifle and was captured later by officers four miles below Mooresville on the Charlotte road, riding in a wagon with a couple of farmers.

On seeing the officers approaching Mercer jumped from the wagon, drew his gun on them and surrendered only after the officers threatened to shoot him down. As soon as the boy was arrested he was brought to Statesville and placed in jail.

Mercer stated that his reason for killing Rhinehardt was that the latter cursed him and threatened to beat him during the morning. Rhinehardt leaves a wife.

Wants Size Formula.

What is the best formula for making size for Nos. 8s, 10s and 11s yarn for blue denim?

(Signed) "Size."

[We would be glad for some of our readers who are familiar with this class of work or those who are sizing this yarn would send in the formula they are using.—Ed.]

Denn Warper Figures.

How do you figure the cut and lease gear for a denn warper for any given number of yards?

(Signed) "Warper."

Bleached Goods

(SELLING POINTS XXVII)

MR. SELLING AGENT:

Can you meet competition
of the mill who guarantees its goods
to be bleached a permanent white
without weakening, and whose fabric
shows the highest degree of
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cotton, wool or silk)?

All this can be obtained at same
cost through Peroxide bleaching.

Advice Free to Mills.

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The MILLERS INDEMNITY UNDERWRITERS saved Southern Textile Mills twenty-seven per cent. of their liability insurance premiums for the years 1918 and 1919. We specialize in class insurance, which is the real answer to INSURANCE AT COST.

Our service is of a personal nature, and through our Greenville Office we are specially equipped to care for the needs of the Carolina Mills.

MILLERS INDEMNITY
UNDERWRITERS

BAILEY & COLLINS, Managers
Greenville, S. C.

Atlanta Dallas New Orleans

MILL NEWS ITEMS OF INTEREST

Albemarle, N. C. — The Lillian Knitlian Knitting Mills, which have been operating a branch plant with 100 machines at Badin, N. C., have discontinued that plant and moved the machines to Albemarle.

Flyntstone, Ga—The Yates Bleachery Company will be ready for operation about February 1, 1921. This new plant has a capital of $200,000, electric power, and will bleach and finish cotton goods. A. E. Yates is president and E. F. Wheland secretary and treasurer.

Rocky Mount, N. C.—After having been closed down since Oct. 1, except for a period when operated on a half-time basis, the Rocky Mount Cotton Mills, at Rocky Mount, N. C., has resumed full time operations with a 25 per cent wage cut for the 500 employes. Despite every effort to stay the decline in cotton prices there has been a reduction during the last week greater than any week this year and cotton in this market is now 60 per cent lower in price than it was in November, 1919.

Five Hundred Bales of Cotton Burned in Greenwood Fire.

Greenwood, S. C., Dec. 5.—Fire which was discovered at the Greenwood Cotton Mills Saturday morning at about 6 o'clock resulted in the burning of about five hundred bales of cotton. The cotton was on the platform of the mill's warehouse. The fire department responded promptly and soon had the flames under control. The loss is covered by insurance.

Cotton Mills to Fight Electric Rate Rise.

Grerensboro, N. C. — Concerted plans of North Carolina cotton mills to oppose the proposed 30 to 50 per cent increase in hydro-electric rates of the Southern Power Company, in this State, were formulated Saturday at a meeting in this city of more than 50 attorneys and officials representing more than 100 of the largest consumers of Southern Power Company electricity.

Recently the Southern Power Company filed a proposed schedule of higher rates for hydro-electric power with the North Carolina Corporation Commission. A preliminary hearing was held before the commission at Raleigh Nov. 22 when numerous objections to the proposed increase were voiced by textile interests. It was then agreed that the petition of the Southern Power Company would be heard before the commission January 24. At Saturday's meeting of the cotton mill men and their attorneys a decision was reached to fight the proposed increase. J. Crawford Biggs, of Raleigh, and E. S. Parker, of Graham, were named members of a steering committee, charged with the duty of outlining the opposition to the proposed raise.

This committee will have authority to appraise the property and audit the books and accounts of the Southern Power Company, providing permission to do so can be obtained. They will apportion the expense incurred in making the appraisal and audit among the consumers, who join in opposing the petition.

The executive committee of the Cotton Manufacturers' Association at a meeting here Saturday, adopted a resolution approving an investigation of the Southern Power Company properties and earnings, "for the information of members of this association without prejudice to those applying for or to those opposing an increase in power rates."

Millions of dollars are involved in the fight, which vitally affects the textile industry in this State.

Mossberk Pressed Steel Corp.

With Frank Mossberk as president and general manager A. A. Underwood, as secretary and sales manager, and C. A. Vander Pyl as treasurer, the Mossberg Pressed Steel Corporation has been organized at Attleboro, Mass., to specialize in the manufacture or pressed steel reels and spools, loom section and adjustable beam heads, narrow fabric beams, jack and dresser spools, drop wires, and special stampings, for the wire and textile industry. The section beam heads which this concern will make are all steel, and will not bend for spring when yarn is wound on them. The management of the new company is in the hands of original designers and manufacturers of steel reels and beams. With the knowledge gained from years of experience they have installed power presses covering a wide range of work and will make tools specially adapted to produce reels and beams of superior strength and finish.

More Griest Expansion.

The Griest Manufacturing Company of New Haven, Conn., for the past fifty years the largest manufacturers in the world of sewing machine attachments, has recently purchased the loom drop wire business of the Frank Mossberg Company of Attleboro, Mass., makers of the Diamond "M" Brand Wires.

This is the second drop wire business to be taken over by them—a short time ago they purchased the Woodbury business and are now one of the largest manufacturers of drop wires in this country.

They are represented in New England by Boyd's Textile Bureau of Providence, Rhode Island, and in the South by the G. G. Slaughter Machinery Company, Greenville, S. C.

Meade Cotton Raised in Georgia.

Atlanta, Ga.—Meade cotton, the long-staple product developed by the United States Department of Agriculture, is reported to have

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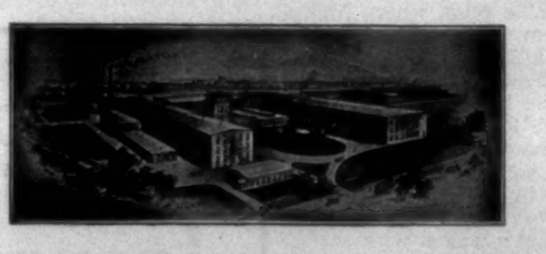
UNIVERSAL WINDING COMPANY — BOSTON



Winding machines for single and ply yarns, cotton, woolen, worsted and silk. Write for circular describing the NEW WIND DOUBLER, also the No. 80 for winding SUPERCONES.
CHARLOTTE OFFICE
804 Realty Building
FREDERICK JACKSON
ATLANTA OFFICE
1121 Candler Bldg.
WINTHROP S. WARREN
—Agents—

PACKIDE
As a driver of
Cones — PACKIDE
has made good
Charlotte Leather Belting Co.
Charlotte, N. C.

been successfully raised this year in this part of the South on the Artesia farms near Albany, Ga. Eighty bales were gathered from a 200-acre tract, for which an offer of 62½ cents per pound has been made, or $312.50 per bale. This would make the lint alone bring $25,000. The experiment with Meade cotton began only last year when a few acres were planted.

Open Southern Office.

Paulson, Linkroun & Co., cotton yarn merchants at 50 Leonard street, New York, have established a southern office at Gastonia, N. C. L. C. Linkroun, of the firm, has just returned from Gastonia, after completing arrangements for opening the new office. E. O. Jennings, who has been for a number of years in business in Gastonia as a mill representative, will be in charge of the new office. He is known as the man qualified for the office by years of familiarity with textile business in its many forms.

American Moisture Company Sold.

The sale is reported from Providence, R. I., of the stock interest of the late William Firth in the American Moistening Company of Boston, to the Grinnell Company, Inc., of Providence, which thus acquires control of the business. Russell Grinnell succeeds the late Mr. Firth as president, and Frank B. Comins continues as vice-president and treasurer. It is understood that the executive and technical organization of the company will be maintained as at present.

The official announcement of the Grinnell Company says: "The new arrangement between Grinnell Company and the American Moistening Company rounds out and completes the group of closely inter-related industries which we have developed from the basic idea of 'Science and Service in Industrial Piping Equipment.' "

Newport Chemical Works Announce Two New Colors.

The Newport Chemical Works, Inc., has placed on the market two new Direct Oranges which are of the Mikado group:

Newport Direct Orange 2 R
Newport Direct Orange 2 R G

These two products are of the same character, excepting that the latter is yellower. They are valuable both as self colors and for shading purposes, and are noted for their remarkable fastness to chlorine as well as splendid resistance to light, acids, alkalies, and soap.

They find extensive use in effect dyeing of mixed materials as they leave animal fibers practically clear.

Screw Machine Products

for Textile Mills and allied Industries. We make Special Shaped turnings in steel or brass.

Send samples or Blue Prints for quotations. Please state quantities ordered.

SHAMBOW SHUTTLE CO.
Woonsocket, Rhode Island

The late ex-President Roosevelt's motto was

Be Prepared!

Anticipate your warm weather requirements and order

Puro Coolers
NOW

DON'T DELAY.

40 Feet Coil Pipe—Cover with locking device and rubber washer, making an air tight Tank—equipped with PURO Sanitary Drinking Fountain.

Puro Sanitary Drinking Fountain Co.
Haydenville, Mass.

Southern Agent
E. S. PLAYER, Greenville, S. C.

GUDE & CO.

All classes of building construction promptly and efficiently executed at reasonable prices.

CANDLER BLDG. ATLANTA, GA.

"NO-WASTE"
SEAMLESS
ROVING CAN

These cans are the Best Hard Fibre Cans made. They LOOK well, ACT well and WEAR well.

DIAMETERS
9"-10"-11"-12"-14"-18"

Mills please take note that we have some 11" size for immediate shipment

STANDARD FIBRE CO.
25 Miller Street Somerville, Mass.

Picker Sticks
Spools
Skewers
Binders
Loom Supplies

Ivey M'f'g Co.
Hickory, N. C.

RIGHT HAND

DAVID BROWN CO.
Successors to
WELD BOBBIN AND SPOOL COMPANY
LAWRENCE, MASS., U.S.A.
MANUFACTURERS OF HIGH GRADE
Bobbins, Spools, and Shuttles
For Cotton, Woolen, Silk, Knitting and Carpet Mills

We make a specialty of Hand Threading and Woolen Shuttles. Enameled Bobbins and all kinds of Bobbins and Spools with Brass or Tin Re-Inforcements.

Write for quotations

LEFT HAND

THE CHOICE OF A HUMIDIFYING SYSTEM

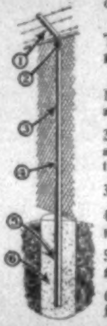
must be one that for simplicity with great capacity and economy in maintenance produces uniformly such conditions that may be determined for the different requirements of the work. In the American Moistening Companys method of humidifying, all such requirements are GUARANTEED.

Our COMINS SECTIONAL HUMIDIFIERS
Our FAN TYPE and HIGH DUTY HUMIDIFIERS
Our VENTILATING Type of Humidifier (Taking fresh air into the room from outside)
Our ATOMIZERS or COMPRESSED AIR SYSTEM
Our COMPRESSED AIR CLENING SYSTEM
Our CONDITIONING ROOM EQUIPMENT
Our AUTOMATIC HUMIDITY CONTROL (Can be applied to systems already installed)
Our AUTOMTIC TEMPERATURE CONTROL
Are all STANDARDS OF MODERN TEXTILE MILL EQUIPMENTS.

AMERICAN MOISTENING COMPANY
WILLIAM R. WEST, President BOSTON, MASS. FRANK B. COMINS, Vice-Pres., Treas. and Gen. Mgr.
SOUTHERN OFFICE, Atlanta Trust Company Building, ATLANTA, GEORGIA

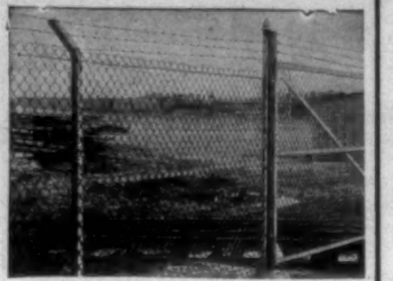
AFCCO Fences are Barriers of Steel

That fence that you need—is it to be highly ornamental or an effectual barrier against trespassers? You will find just what you desire in the Affco line.



The AFCCO one piece steel angle Post

1. Integral barbed wire arm cannot work loose.
2. Top rail through post, a solid unit after fabrication.
3. Galvanized.
4. Open section easily painted.
5. Cannot corrode below ground.
6. Concrete footing, best for permanent alignment.



The rugged and extreme strength of design embodied in the structure of Affco Non-climbable Fence is a paid up insurance policy against all intruders.

Let us tell you all about Afcco Fence.

General Equipment Company
518 Realty Building
CHARLOTTE, N. C.

THE GREATEST IMPROVEMENT MADE IN COTTON SPINNING IN QUARTER OF A CENTURY

The Richards-Hinds Light Running Rolls

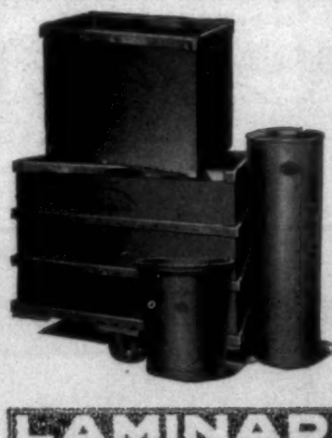
Over 1,250,000 Spindles Equipped to Date

Guaranteed Claims

Cockley Yarn Preventor
Extra Strength of Yarn
Less Waste
Greater Production
Less Change of Roll Settings
Reduced Cost of Spinning
One-third Saved on Leather Covered Rolls
Better Spinning with Improved Product

All machine builders are agents and will quote prices for new work. Also for prices and particulars write to

The Metallic Drawing Roll Company
Indian Orchard, Mass.



LAMINAR
MILL RECEPTACLES

LAMINARS WEAR BETTER

The durability of Laminar mill receptacles is not merely a matter of construction. They are built pretty much as others are built. It's the extra denseness and toughness of the VUL-COT Fibre that gives them their famous wear resistance.

For VUL-COT Fibre cannot rust or dent like metal, though it is as strong—it will not splinter or warp like wood, though it is as light—and it's as smooth as glass and does not roughen with use.

VUL-COT Fibre is a super-development of vulcanized cotton fibre. All these qualities we mention will be apparent to you at once, if you send for samples. You will appreciate why Laminars have been known to give continuous service for over twenty-five years.

AMERICAN VULCANIZED FIBRE CO.
Sole proprietors and **manufacturers**
New England Dept.: 12 Pearl St., **Boston**
C. C. Bell, Vice-Pres., Resident Manager
Head Office & Factories, **Wilmington, Del.**

MONTGOMERY & CRAWFORD
SPARTANBURG, S. C.
Textile SUPPLIES Electrical
HARDWARE MACHINERY

English Installing New Spindles on Large Scale.

Manchester, Eng.—"The difficulty in getting delivery of new cotton spindles is, of course, a consequence of the arrangement by which the machinists were kept so long on munition work," comments the Manchester Guardian.

"It has been impossible to meet all the overseas demand, but it is interesting to learn that home firms have had a good share of the output, over 100,000 spindles having been secured since the war for mills which have been extended, while in other cases mules have been taken out and ring frames, giving a greater production substituted for them. Our Oldham correspondent writes that in that district over half a million spindles are in course of delivery to new and rebuilt mills, apart from those that are being added to the fixed stock of many firms in the town.

"When the war broke out, two new mills, the Gorse No. 2 (Hollinwood) and the Lilac (Shaw), were virtually ready for their machinery; but they were required to wait. Later on the Americans took them over for the purpose of assembling aeroplanes. After the conclusion of the armistice they were restored to their pre-war state, and the Gorse No. 2 was purchased by a syndicate

---

Superintendents and Overseers.

We wish to obtain a complete list of the superintendents and overseers of every cotton mill in the South. Please fill in the blank below and send it to us. We would also be glad to have you include any recent changes in overseers and superintendents.

..............................1920.

Name of Mill..

Town ....

.... Superintendent

....Assistant Superintendent

.... Carder

....Second Hand Carding

.... Spinner

....Second Hand Spinning

.... Slasher

.... Warper

.... Weaver

....Second Hand Weaving

....Loom Fixer

....Loom Fixer

....Loom Fixer

....Loom Fixer

....Cloth Room

....Shipping Clerk

.... Dyer

....Outside Foreman

....Master Mechanic

....Cotton Grader

Recent changes..

....

....

....

....

....

TALLOW—OILS—GUMS—COMPOUNDS ALSO HOSIERY FINISHING AND BLEACHINGS

TEXTOL, A new product especially for Print Cloths. A complete warp size, requires no addition of tallow

Tallow, Soluble Grease, Soluble Oils, Gums, Glues, Gum Arabol, Lancashire Size, Waxes, Finishing Pastes, Soaps, Glycerine, Ready-made eavy Size, Sago and Tapioca Flours, Dextrines, China Clay, Soluble Blue Bone Grease, Bleachers' Blue.

SPECIAL COMPOUNDS FOR WARPS, WHERE STOP MOTIONS ARE USED.

WEIGHTING COMPOUNDS FOR COLORED AND WHITE WARPS.

FINISHING COMPOUNDS FOR ALL CLASSES OF FABRICS.

The Arabol best grades of cotton warp sizing compounds make the "finest weaving and will hold the fly."

These compounds are based on the best practical experience and the best materials used in their manufacture.

TRADE MARK

The Arabol Manufacturing Co.

Offices: 100 William Street, New York.

Southern Agent: Cameron MacRae, Concord, N. C.

R. P. GIBSON, South Carolina Agent, Greenville, S. C.

GUY L. MELCHOR, Ga., Ala. and Tenn. Agent, Atlanta Ga.

Factories: Brooklyn, N. Y.

headed by W. Hopwood, of Shaw. They renamed the mill the Ace, and are equipping it with machinery for specialties. It will contain 150,000 mule spindles and 30,000 ring spindles, with special machinery for the manufacture of mixture yarns in various percentages of silk, wool, cotton, cashmere and mohair, etc. This is stated to be the only machinery of its kind in the country. The firm is also developing the manufacture of hosiery from its own yarn and installing knitting machinery of hand and power driven types. The Lilac Mill was taken over by the Government, and later on restored to its original owners, who are now installing 100,000 mule and 40,000 ring spindles.

"The Castle Mill, Hathershaw, which is almost completed, will shortly contain 22,000 ring spindles. Two mills in the Oldham area, the Ellenroad (Newhey) and Lamb (Heyside), were burned down. The Ellenroad ruins were bought over a year ago by a syndicate, who have rebuilt the mill and are installing 77,000 ring spindles, which will shortly be producing yarn, and the Lamb Mill, which was almost destroyed less than a year ago, has been rebuilt, and will have in it 80,000 ring spindles, in addition to 6,280 mule spindles which were saved from the fire. The present name of the mill is the Rhoa. Both the Ellenroad and the Lamb mills had only mule spindles before the war."

Durham Hosiery Mills Close Dec. 16. for Holidays.

Durham.—The congress of workers of the industrial democracy of the Durham Hosiery Mills here last eek voted wage reductions and a urtailed program of working hours ncluding a Christmas vacation of lightly more than two weeks.

The Durham Hosiery Mills here, nd other mills of the state under ontrol of the Durham Hosiery iMlls vill close December 16, Thursday, r the Christmas vacation, reopening January 3.

For last week and this the mills will operate on a four-day week, 10 hour day schedule at a reduction of 10 per cent on the present wage scale.

The following week, beginning December 13, the mills will operate on a four-day week, 10-hour day, schedule at a further reduction of 15 per cent on the new wage schedule at a further reduction of 15 per cent on the new wage schedule for a total reduction of close to 25 per cent on the present scale. At the end of that week, Thursday, December 16, the mills will close for the holidays.

Opening on January 3, the mills will operate four days a week 10 hours per day at the same scale in effect at the time of closing.

Officials are unable to anticipate what may take place after January 1, but it is hoped conditions at that time and industrial readjustment will be at such a stage as to insure plenty of work for the mill employes.

Damage, $3.48.

"Sis wont be able to see you tonight, Mr. Jones," said her little brother. "She's had a tur'ble accident."

"Is that so? What happened?"

"All her hair got burned up."

"Good heavens! Was she burned?"

"Naw, she wasn't there. She doesn't know it yet."—The North Star.

They were looking at the kangaroo at the Zoo, when an Irishman said: "Beg pardon, sor, phwat kind of a creature is that?"

"Oh," said the gentleman, "that is a native of Australia."

"Good hivins!" exclaimed Pat; 'an' me sister married wan o' thim."—Tit-Bits.

Experience is the teacher who proves to us the things which older people would have told us if we had bbeen willing to listen.

Poor Tempering Does It { Makes broken travelers and cut threads.

U.S. RING TRAVELERS ARE UNIFORMLY TEMPERED

Amos M. Bowen
Treasurer
Providence, R. I

WILLIAM P. VAUGHAN, Southern Representative, P. O. Box 792 Greenville, S. C.

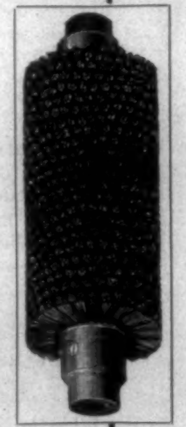
Mr. Mill Man

The average life of your Card and Comber Brushes is Ten Years.

The Cost of Keeping them in Proper Condition is about fifty cents per Year.

Now is the Time while your mill is operating on a short schedule to

Have These Repaired



We make a specialty of repairing brushes of every description and are in a position to render you prompt and efficient service.

Distributors for
Garvey Stencil and Marking Ink
A non-evaporating waterproof Marking Ink which is impossible to rub off. COMES READY FOR USE.

We Manufacture Every Description of Brush used in Textile Mills—Your Catalog is Waiting

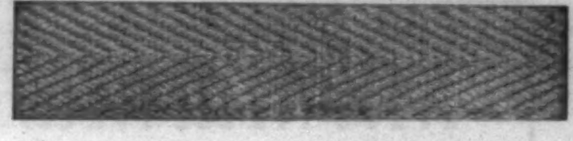
Atlanta Brush Company
Successors to D. D. Felton Brush Co.
Central and Trinity Aves
ATLANTA, Georgia

PICKER GEARS

Why order from New England when you can buy at home?
We carry a complete assortment in stock for immediate shipment. Quality guaranteed—price right.
Send us a trial order and be convinced.
Can also furnish all other textile gears.

High Point Machine Works, High Point, N.C.
Textile Founders Machinists and Engineers

AMERICAN TEXTILE BANDING CO., Inc.
Manufacturer
Spindle Tape AND Bandings



Belfield Ave. and Wister St., Germantown, Phila., Pa

STRUCTURAL and Bar Steel, Ornamental Iron, Fenestra Steel Windows, Chicago Tanks and Towers.
REINFORCING BARS AND FENESTRA STEEL WINDOWS n stock in our Charlotte warehouse. Immediate shipment. We are prepared to cut and fabricate reinforcing bars. Send plans or list of material for prices. *Our Engineering Force is at Your Service.*
SOUTHERN ENGINEERING COMPANY
504 Realty Building CHARLOTTE, N. C

Good Time to Overhaul Machinery

Your PRODUCTION as well as the LIFE of your frames depend on the condition in which they are kept. The QUESTION then is, are your frames needing overhauling?
We are the PIONEER OVERHAULERS of the South and are today the LARGEST OVERHAULERS in our special line.
We are in position to furnish men promptly for erecting, moving and overhauling cotton mill machinery.

SOUTHERN SPINDLE & FLYER COMPANY, Inc.
CHARLOTTE, N. C.
Manufacturers, Overhaulers and Repairers of Cotton Mill Machinery.
W. H. Monty, President and Treas.
W. H. Hutchins, Vice Pres. and Sec.

LOOM-LUBRIK TWISTER RING GREASE MYCO FLUIDO
MYCO GREASE SIZE REMOVOIL
MASURY-YOUNG COMPANY
62 Years in Business BOSTON, MASS.
Disinfectants, Spot Removers, Greases, etc.

The Cotton Situation in Central Europe.

(Howard W. Adams, Representative of the Department of Commerce, Berlin.)

The spinners and textile mills in Germany, Holland, Czechoslovakia, Austria, and Jugoslavia are working only 20 to 30 per cent of their full capacity, except in the case of Holland. This situation is due not only to the lack of fuel but also to the lack of raw cotton.

Considering the unfavorable rates of exchange of the German, Czechoslovakian, Austrian, and Jugoslavian currency with respect to the American dollar, the spinners and the textile mills can afford to buy raw cotton only when they are able to simultaneously market the converted goods for export. This is very difficult for them to do, because they can get the raw cotton for from four to six weeks after purchasing it, and the mills can never be sure about the cost of labor two months ahead. The consignments of raw cotton, now stored in the warehouses at Bremen, Hamburg, Eisenbrod (Bohemia), etc., were bought by the cotton dealers before the drop in the price of cotton in the United States, and, consequently, the prices which the owners of these consignments are now asking from the consumers, with the additional cost of the relatively long storage of the goods in the warehouses, render the purchase of this cotton extremely difficult for the mills, because the goods which will be converted from this raw cotton will be too costly for export, and they can not compete with the prices existing abroad in the countries where the mills are using the cotton bought recently. This difference can not be even balanced by lower wages existing in Germany, Szechoslovakia, and Austria, even if the money of these countries could be converted into money of other countries.

This situation is aggravated by the fact that the cotton dealers and merchants, who are owners of these consignments, have some particular connections in some of these countries, which enable them to secure expedients to force the mills to use up the old supplies of raw cotton, at the same time going a long way toward blockading new shipments until the old ones are consumed.

In order to effect a better method of getting raw cotton into Germany and to eliminate possible speculation, the spinners and textile mills in Germany are now organized into groups, according to their geographical location. Some of such organizations (Verbands), organized private corporations, as, for instance, "Ditag" and others, with the purpose of handling, through such a corporation, the import of raw cotton and the export of converted goods for all the spinners and textile mills which participate in this corporation. Other spinners and textile mills are endeavoring to do their exporting and importing through a specially organized Government department as, for instance, in the State of Wuerttemberg, where a special department buys all the raw cotton necessary for the mills located in Wuerttemberg and distributes the raw cotton among them.

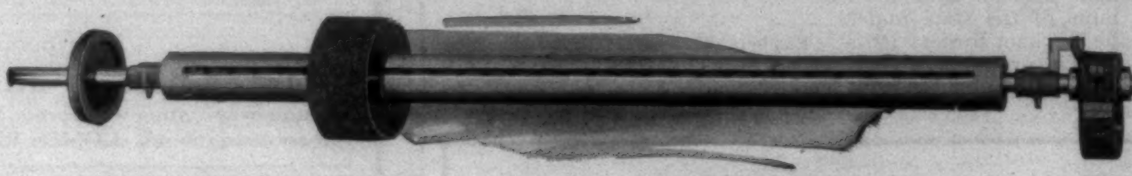
At the end of July, 1920, there were reported a total of 8,759,740 spindles in Germany, out of which number there was a total of ,230,996 spindles in operation.

During the period beginning August 1, 1919, and ending July 31, 1920, cotton from various sources was used by the German spinning mills as follows: American; 355,977 bales; Indian, 73,709 bales; Egyptian, 14,467 bales; and miscellaneous, 40,758 bales. The Reichswirtschaftstelle fur Baumwolle (German Government Cotton Bureau) is authority for the foregoing figures. The American cotton used was, on an average, of the grade of fully middling or higher.

An estimate of Germany's possible requirements for cotton is made difficult by the fact that the consumption of cotton is dependent upon the deliveries of coal to the German spinning mills. The exchange question furnishes another serious obstacle. It appears that about the only way cotton transactions can be carried out here under existing conditions is by a shipment of this commodity to Bremen and Hamburg and there stored awaiting demands of buyers on terms to be arranged by cable. German cotton buyers offer not the slightest encouragement to a transaction whereby the cotton would be sold through the ordinary pre-war channels.

More than 10,000 persons a year are killed in automobile accidents in the United States.

Textile Grinding Machinery Of All Kinds



Send in Your Old Grinders to be Repaired
Southern Agent, E. M. Terryberry, C-o Howard Bros. Mfg. Co., 1126 Healy Bldg., Atlanta, Ga.
B. S. ROY & SON CO., WORCESTER, MASS.
Established 1868

Babson Gives "Ten Bull Points" in Present Business Situation.

(By Roger W. Babson.)

1. The great mass of working people in this country still have their Liberty bonds. It is true that corporations and many small holders have sold theirs. The great bulk of wage workers, however, still retain theirs, and they will not cease buying merchandise so long as they hold these bonds.

2. Prohibition is a great factor for prosperity, the importance of which is not fully realized. Previous to July, 1919, several billion dollars a year were being spent by people of this country for drink. About 20 per cent of this money has gone into the savings banks; but the balance has gone into building homes, buying merchandise, raising the standard of living. Whether 100 per cent prohibition has come to stay indefinitely, I do not know; but it surely must be as much of a factor for good business during the next few years as it has been during the past year and a half.

3. The Federal Reserve System is working well. It is popular to criticise the Federal Reserve Board; but such criticism is usually directed against their good acts rather than against their lax ones. The Federal Reserve System cannot expand indefinitely any more than can a rubber ball; but we have substituted an elastic system, the good results of which are bound to continue.

4. Advertising has become a great economic factor for the producing and steadying of business. The old form of advertising, which was largely of the luxury type, has been replaced by a new productive form. This new form of advertising has come to stay, and could be a great factor in preventing business panics such as we have had in the past.

5. Though our foreign trade has greatly grown during the past five years, it is no greater proportion of our total trade than it ever was. If we lost all our export trade today, it would reduce our total business only about 5 per cent.

6. Standardization in manufacturing is rapidly increasing. Great improvement can still be made along these lines. The Ford system can be applied to a great many more commodities than automobiles. Concerns that used to manufacture 10,000 different articles are now doubling their capacity, but halving the number of articles they produce. All of this is along the line of efficiency and tends to continue prosperity.

7. The seasonable fluctuations in industry and commerce are being gradually ironed out. Part of the loss through seasonable manufacturing, and purchasing is being eliminated by concerns taking on different lines. Thus the coal merchant is going into the ice business, and vice versa. Much of the difficulty, however, has been due to custom, and this bad custom is rapidly being changed.

8. Taxation will surely be reduced. Not only will the new administration reduce expenditures, but our system of taxation will be changed so as to encourage production rather than penalize it.

9. Modern education for executives and employees is rapidly being introduced. Industrial education is constantly growing.

10. The United States has accumulated great wealth during the past five years, and has paid almost all of its foreign indebtedness. We are now a creditor nation instead of a debtor nation. Our people are the richest of any on the face of the earth.

Building.

(Continued from Page 17

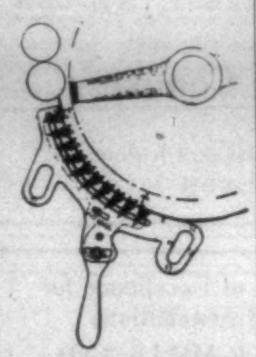
fied. Since then, in co-operation with the Humidity Control Company of Indianapolis, Indiana, they have developed a wet and dry bulb humidity control for application to lumber kilns in connection with the temperature control.

The United States Government, early in its war operation, developed through their Forestry Department a special type of kiln which was built in large numbers for different concerns having Government contracts involving the use of hardwood. Powers apparatus was specified in its application to this "Tiemann' type of kiln, as it was entitled.

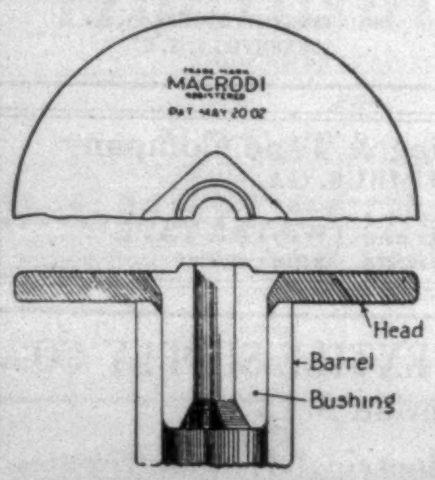
This is only one of the many devices for the control of heat in industrial processes which this company is now producing, these specialties being applied to air or liquid temperatures with equal facility and effectiveness, such control resulting in much practical saving in time, material, and labor; and indirectly but to a quite worth while amount affecting the quantity of fuel required in the plant.

QUALITY PLUMBING IN ALL LINES
McAULEY, GARRISON & HOPKINS CO.
"The Service Shop"
Plumbing and Heating Contractors
313-315 E. Trade St. Phone 143 Charlotte, N. C.

E C O Watchmans' CLOCKS
WRITE FOR CATALOGUE
ECO CLOCK CO. Sou. Dept., 403 Walton Bldg. Atlanta, Ga.



Less Waste — Cleaner Yarns
Atherton Adjustable Pin Grids
most manufacturers are adopting, knowing that they will pay for themselves in a short time in the saving of good stock, at high price of COTTON today.
Atherton Pin Grid Bar Company
L. D. ARMSTRONG, President
GREENVILLE, S. C. PROVIDENCE, R. I.



The Macrodi
FIBRE HEAD
WARP SPOOL
after fourteen years of the hardest mill use has demonstrated that it is
Durable — Economical
Write for particulars of the added traverse with corresponding increase in yardage—an important feature of this spool.
Prompt deliveries in two to three weeks after receipt of order.
MACRODI FIBRE CO.
Woonsocket, Rhode Island

The Largest Manufacturers of Toilet Paper South
1000—2-4-6 Marietta St., ATLANTA

HIRSCH LUMBER COMPANY
YELLOW PINE
MAIN OFFICE: 26 and 28 Beaver St., New York
1203-1204-1205 and 1206 Heard National Bank Building
JACKSONVILLE, FLA.
MILL CONSTRUCTION TIMBERS
LUMBER FOR THE VILLAGE
PROMPT SERVICE — BEST MATERIAL — CONSISTENT PRICES
Write JACKSONVILLE OFFICE

B C
TRADE MARK
BARBER-COLMAN COMPANY
MAIN OFFICE AND FACTORY
BOSTON, MASS. ROCKFORD ILL GREENVILLE S.C.
HAND KNOTTERS AND WARP TYING MACHINES

Spartan Sizing Compound Co. Inc.
MORELAND and WITHERSPOON, SPARTANBURG, S. C.
Manufacturers of
Spartan Compounds,
Tallows and Gums

The Great "Flu" Remedy **PINESOL**

Mr. Joseph C. Shephard, Wilmington, N. C.

Please ship by freight one barrel Pinesol, and have same followed with tracer. We will appreciate it very much if you will let this shipment come forward right away. For your information will state, that we are getting most excellent results from the use of Pinesol for "flu," and while we are not needing another barrel at this time, we are using every precaution to keep a supply on hand at all times.

Yours very truly,
GLEN-LOWRY MANUFACTURING CO.,
W. M. Sherard, V. P. and Gen. Mgr.

Manufactured by
JOS. C. SHEPARD, Wilmington, N. C.

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BONDS

Water—Its Uses in the Textile Industry.

(Continued from page 19.)

scoured with well-made soaps free of alkali. Generally speaking, from three to five pounds of such soap per 100 gallons are required for the scouring bath. A water absolutely free of lime and magnesia will produce first-class wool with three pounds, while waters of even moderate hardness will often require more than five pounds.

The oleates, the sticky lime and magnesium soap curds, interfere in every subsequent manipulation of the wool. Carding machines handling wool covered with soap spots have their scrapers rapidly clogged up, causing a loss of time in clearing them. When such wool is stored, the soap spots decompose and impart a very unpleasant odor to it which tends further to lower the quality. When this wool is turned into yarn, there is a poor yield, the yarn is uneven and is not easily drawn off from the spools later on. The soap spots make dirty, unsightly spots in white goods, and cause lighter or darker splotches and streaks in the piece, according as the soap spots attract and repel the color in the dye bath.

These defects completely disappear when zero water, which cannot cause the deposit of any oleates, is used in the scouring. Furthermore, comparative tests show that higher numbers can be spun from a wool free from oleates, which is, of course, a distinct advantage to the spinner, who uses zero water.

The soft, elegant feel so much desired is well-nigh impossible when the wool is processed in hard water. The wool fiber is exceedingly susceptible in this respect, and the change in results obtained where soft water is substituted for even a very moderately hard raw water is very marked.

The influence of the impurities in water on dyeing operations will depend very largely on the character of the dyestuffs employed. In certain cases the tone of the resulting color is modified by the presence of adverse mineral salts in natural water supplies. The presence of iron, however, even in very slight quantities, in the water, may cause a considerable alteration of the shade, usually dulling and darkening it. Basic dyes form incoluble precipitates with lime and magnesia compounds which result in a large loss of coloring-matter and also faulty and streaky dyeing by reason of a precipitate of colring-matter which is smeared on the material being dyed. The presence of iron in the water is also very deleterious in using basic dyes. With the substantive colors the influence of hard water varies largely with the particular dyestuff, in some cases causing precipitation and in others not. As a general rule, however, it may be taken that hard water is deleterious with all classes of dyes.

No matter what effect on the dye stuffs of the lime and magnesium salts, it is certain that the washing off of piece goods after dyeing or mordanting should always be done with soft water. Otherwise the deposition of the salts in the selvages of the goods due to the evaporation of the water, will give rise to "white lists" or "dark lists," according as the salts act as mordants or detergents with the particular dye stuff used.

The sum up, the finished product in every case, whether silk, cotton, wool, when handled in soft water or union goods, is of much higher grade, and hence is much more readily merchantable when zero water "as soft as rainwater" has been used for every step of the process. Every textile manufacturer, no matter where located, can now equal the product of the world's most famous mills by obtaining for himself what formerly was an advantage strictly of location.

In the United States alone "Permutit" apparatus is annually delivering five billion gallons of treated water to textile mills—and it is a noteworthy fact that the savings accomplished pay an average net return of 50 per cent on the capital invested. Consequently considering that money is worth from six per cent to ten per cent, it is seen that economy lays decidedly in favor of processing in "Permutit" water.

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Inquiries will receive our best attention

Cotton Dyeing—Past and Present.

(Continued from Page 8).

that experience has gradually overcome most of these difficulties, so that today excellent results may be depended upon in most instances.

No vat dyes were made in this country previous to the war, and cotton manufacturers were quite upset when the stock of these dyes was exhausted. Vat dyes are among the most difficult dyes to manufacture, and it is in respect to this class perhaps more than any other that the achievement of the American dyestuff manufacturers is to be commended. As a result of their industry, American made indigo has been on the market nearly two years, and several manufacturers are now selling or are about to introduce a considerable number of vat dyes. In cotton dyeing two quite different types of machines are used: First, those in which the material being dyed circlates through the dye liquor, and second, those in which the dye liquor is forced, usually by means of a pump, through the material being dyed, which remains perfectly stationary. The first type is the older of the two and includes most of the machines formerly used for all kinds of cotton dyeing. Recent years, however, have seen a decided trend toward the second type, for they are more economical in most every respect, and were it not for the fact that they are unsuited for certain classes of dyes, and likely to produce uneven dyeings with others, their introduction would have been more rapid. This second type of machine has even been extended to the dyeing of warps on the beam, and the next few years will see many advances along this line, particularly as concern warps, cops and spools of yarn and slubbing.

The American cotton dyeing and printing industry is rapidly becoming self sustaining as to dyes, chemicals and all types of machinery and applicances. With proper protective support from the Government there need be no fear in the future for this branch of the textile industry even though temporarily isolated from the rest of the world.

The Incandescent Lamp—Its History.

(Continued from Page 9).

inert gas in the bulb. Nitrogen is used in the larger sizes and argon in the smaller sizes. These lamps are called Mazda C lamps to distinguish them from Mazda B (vacum) lamps. Their efficiency is dependent upon their size, the 1000-watt, -volt lamp having an efficiency equivalent to about 1-2 watt per (horizontal) candle, or about 8 watts for each 16 candles.

The improvement in efficiency, maintenance of candle-power and reduced lamp cost, have enormously reduced the cost of electric lighting. In adition, the average cost of electric current has also come down since the early days.

"Worth," in proper names ,as in Kenilworth, Edgeworth, etc., signifies that the town stands on a tongue of land.

A Builder of the South.

(Continued from Page 12).

been exposed to public gaze. Someone once said that the New England people were so thrifty that many New England lovers wrote their letters with the idea that after they were dead their heirs would be able to make money by publishing their love letters, and many books of many love letters have helped to enrich some families. But Dr. Winston knew better than to open to public inspection the heartbeats of these lovers. He did, however, pick here and there from some of Tompkins' letters, though never a line from hers, little statements dealing wholly with his work and the conditions under which he was laboring, whether in the machine shops, in the drafting room or over in Germany. These sentences gathered here and there illuminate something of the inside spirit and life of Tompkins, and never a one, with one exception, touches on the sentiment which he felt for the loved one so soon to be taken away. That one was wisely published. It is in itself a gem in literature, for it is a rare tribute from a hard-working student of mechanics, driving day by day in the drafting room and the machine shop, to the woman to whom he gave his love and in whose companionship he had anticipated the joys of life. It is worth publishing. Here it is:

"You are to my better self an invaluable mine from which jewel after jewel is added to my refinement and my feeling and my mode of thought, to make them delightful to myself and pleasant to all who know me. You are to me what the sun is to a flower, that lights it up and makes it beautiful and fragrant. My life until I knew you was but as the seeding of a flower that could become nothing beautiful so long as it remains away from the nourishing light. You have already nourished this life and given it sufficient strength to weather quite a stormy night, but it needs your goodly rays on the morrow to regain new strength and keep it well, alive and prosperous. And to continue our metaphor still further, as the shades and tints of a flower can never be seen by any light so well as by that which makes it, so the refinement you have lent me could never be appreciated so well as when I am under your immediate influence."

Rest thou in peace, beloved friend, great leader in thought and work and industry. Thou didst hear and answer "the Master's call," for which thou didst wait patiently through five years of suffering and invalidism. In thy life and work is inspiration for every young man in the South.

[This new book of the interesting life of one of the Souths greatest men may be secured from the Clark Publishing Company, Charlotte, N. C., upon receipt of the price, $3.00.]

It is estimated that the country at large is short about $3,500,000,000 worth of normal building construction, indicating the building program to be from eighteen to twenty-one months behind.

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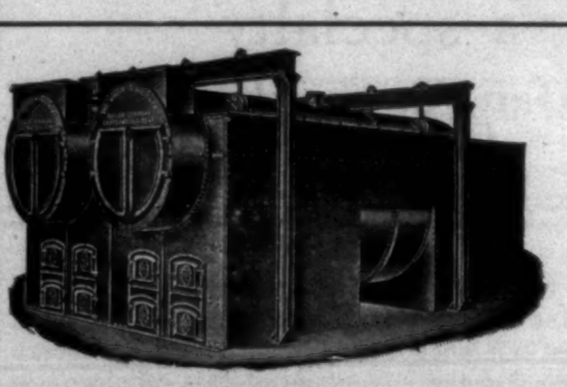
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SOUTHERN COTTON MILL STOCKS.

for week ending November 29, 1920.

Abbeville Cotton Mills	200	---
American Spinning Co.	325	386
Anderson Cotton Mills, com.	---	175
Anderson Cotton Mills, pfd	85	95
Aragon Mills	---	280
Arcade Cotton Mills	---	115
Arcadia Mills	250	325
Arkwright Mills	390	---
Augusta Factory, Ga.	---	135
Avondale Mills, Ala.	450	---
Banna Mills	---	153
Beaumont Mfg. Co.	—	425
Belton Cotton Mills	---	200
Brogon Mills	---	180
Calhoun Mills	---	250
Chesnee Mills	---	300
Chiquola Mills, com.	---	330
Chiquola Mills, pfd.	80	84
Clifton Mfg. Co.	---	140
Clinton Cotton Mill	200	---
Columbus Mfg. Co., Ga.	235	240
Cowpens Mills	---	120
Consolidated Textile, N. Y.	19	21
D. E. Converse Co.	---	140
Dallas Mfg. Co., Ala.	---	250
Darlington Mfg. Co.	---	220
Drayton Mills	---	100
Dunean Mills, com.	---	150
Dunean Mills, pfd.	83	93
Eagle & Phenix Mills, Ga.	230	---
Enterprise Mfg. Co., Ga.	175	---
Exposition Cotton Mills, Ga. V. T. C.	550	---
Gaffney Mfg. Co.	---	95
Cainesville Cot. Mills, Ga., com.	---	205
Gluck Mills	---	225
Glenwood Mills	---	155
Graniteville Mfg. Co.	---	400
Greenwood Cotton Mills	370	---
Grendel Mills	---	305
Hamrick Mills	---	200
Hartsville Cotton Mills	405	---
Henrietta Mills, N. C.	---	360
Hermitage Mills	175	250
Inman Mills	125	150
Inman Mills, pfd.	---	100
International Mills, common (Par 050)	60	65
Jackson Mills	325	340
Judson Mills	---	325
Judson Mills, pfd.	85	—
King, John P Mfg. Co., Ga.	200	245
Lancaster Cotton Mills	235	---
Laurens Cotton Mills	---	295
Limestone Cotton Mills	---	200
Marion Mfg. Co., N. C.	---	300
Marlboro Mills	---	100
Massachusetts Mills, Ga.	134	139
Mills Mfg. Co.	375	425
Mollohon Mfg. Co.	---	315
Monarch Mills	130	155
Newberry Cotton Mills	---	305
Ninety-Six Mills	200	---
Norris Cotton Mills	---	190
Oconee Mills, com.	200	---
Orr Cotton Mills	---	250
Pacolet Mfg. Co.	---	250
Pacolet Mfg. Co., pfd.	89	96
Panola Mills	---	200
Pelham Mills	---	101
Pelzer Mfg. Co.	—	150
Pickens Cotton Mills	---	171
Piedmont Mfg. Co.	—	175
Poe, F. W., Mfg. Co.	---	150
Poinsett Mills	---	160
Riverside Mills, com. (par $12.50)	—	18
Saxon Mills	---	160
Sibley Mfg. Co., Ga.	---	135
Spartan Mills	---	300
Toxaway Mills, com. (Par $25)	40	45
Tucapau Mills	—	230
Union-Buffalo Mills, com.	---	40
Union-Buffalo Mills, 1st pfd.	—	87
Union-Buffalo Mills, 2d pfd.	33	37
Victor-Monaghan Co., com.	—	100
Victor-Monaghan Co., pfd.	90	100
Ware Shoals Mfg. Co.	---	285
Watts Mills, com.	---	130
Watts Mills, 1st pfd.	80	100
Watts Mills, 2nd pfd.	95	110
Whitneyy Mfg. Co.	225	295
Williamston Mills	250	360
Woodruff Cotton Mills	---	300
Woodside Cotton Mills, com.	---	260
Woodside Cotton Mills, pfd.	83	88
W. S Gray Cotton Mills	100	110

Waging War on the Bollworm.

(By Sam Wakefield).

Hints of a relentness, pitiless warfare waged by scientists, who employ vast "conscripted" armies of insects, against the hordes of enemy pests which destroy the raw material of our textile industries were given by Professor H. M. Lefroy in a lecture he delivered in London on September 30th before the Textile Institute of England. He spoke on "Insects as controlling factors in the supply of cotton and textile materials," and indicated how the pink bollworm is the most ferocious enemy of cotton production.

"This insect" he says "has affected the price of cotton on all the markets of the world." "In the last twenty years entomology had reached a stage where such pests could be prevented."

Then the lecture told of one phase of the warfare which is waged in India against a variety of bollworm. This attacks the cotton plant after a cold winter in which the low temperature has been fatal to the natural enemy of the pest itself.

"A study of natural conditions" said the professor "enabled a direct remedy to be found in the replacement from other parts of India of the bollworm enemies which had not been killed by the cold weather. This is now done regularly after a cold winter."

"In the case of wool. The foe is the fly, but in England the natural enemies of the fly have been found. They are easily bred, can be transported and released to breed to breed, so performing the function allotted to them in this scientific war against industries microscopical enemies.

The lecture gave figures to show that the pests of the cotton plant wreak damage to the extent of millions of pounds sterling, and as to the future he remarked that if the pink bollworm establishes itself in the American cotton belt, there will be a diminution of yield of at least a third.

He Forgot.

Once an Irishman and a Dutchman became involved in a personal quarrel. They decided to "fight it out." it was agreed between them that the one who first wished to cease the fight should say the word, "sufficient." They fought for about thirty minutes, when the Irishman cried, sufficient."

"Faith," replied the Dutchman. "That's the word I've been trying to think of for the last twenty minutes."

Nobody ever got any the worst of it for treating the other fellow as a gentleman.

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Knit Goods

Philadelphia.—The inactivity of the hosiery market continues uninterrupted except by sporadic sales that take place from time to time in the market, and which are of little importance of being a fair barometer from whic hto judge the condition of the market. No starting reductions have been heard of in the market this week, although there is always an undercurrent of feeling that any time there may be further price recessions capable of bringing in a tidal wave of orders for the firm that is willing to make an open sacrifice of its goods.

The middle of the month, so it is said, may see some houses again forced to make reductions of spot supplies on which they want to realize some ready cash. The last installment of the excess profits tax will come as a most unwelcome guest in some quarters, so it is indicated.

Meantime, there is little or nothing new that can be said of the general aspect of the market. Buyers are wanting particularly at this time and it is not expected that they will be here again in sufficient numbers to make for any real business until they have found out just what the results of the holiday business in their own organization have been. This applies particualrly to retailers who are stressing their Yuletide merchandise and letting the usual commodies go by the board for the moment.

The recuperation is expected to take place when the post-holiday inventories have been made, but no one can presage with certainty what the attitude of the retailers or jobbers will be toward spring merchandise now or later in the year and no one is trying to.

"Stabilization of prices of textile products seems unlikely to be brought about through any attempt to work from or toward any arbitrary basis of value as prevailing prior to the war," according to the Knit Goods Bulletin, "unless it can be found possible to follow the parallel from the cost of raw materials through their various processes to finished product, and in wage scales as well, totally ignoring the operations of the law of supply and demand.

"Accepting American cotton as the basic raw material for world production of textiles. It must be apparent that in the steady declines any ratio of values arbitrarily fixed six or eight months ago will have to be abandoned. When cotton was commanding twice pre-war prices there was insistence that cotton underwear, with wages fully twice as before the war, would have to be priced three times pre-war. When cotton fell to what some interests felt was the bottom, the figures were, arbitrarily again, revised by certain interests, to twice pre-war. Lessened demand for the fiber threw that revision into the discard, and now it is reported selling by distressed holders in the South at under what might be regarded a fair pre-war price, in this respect being in the class with wheat and pork on the hoof, two basic food supplies.

"In many textile products cotton is a minor and labor the chief item in cost, so that, regardless of the low level of and uneasiness in cotton, with 100 per cent higher wage scales and the materially greater cost of supplies in the making, also dyestuffs and chemicals, many lines of knitted goods would be fairly priced if at or near twice pre-war. But fertilizers and labor cost on the cotton plantation are far above pre-war levels, from which it is to be deduced cotton cannot remain a profitable crop, on the basis of recent and present spot quotations and that its value will be regulated as, say, in the days preceding the war.

"But if pre-war is to be made a basis of reckoning for casting an assumed normal price for cotton, the question arises, what was the pre-war value?

Forgetting the financial disturbances of 1907-1908, and skipping to 1910-1911, when the entire cotton country of the United States was the storm center of a boom, fluctuations had a wide range, from approximately 20 cents down to 14. True to history, the boom was followed by a decline, and in the next biennial period cotton went as low as 9½ cents, and at no time in the two years, according to charts presumed to be accurate, sold at above 13¼.

"In a discussion of the question 'What was the pre-war value of cotton?' the five biennial periods 1912-1913 to 1916-1917 were accepted as offering a basis for computation, the half decade embracing a period of unsettled conditions due to the then uncertainty of the operations of the present tariff schedules, the fitful months following the declaration of war, and later the period when cotton went to 27 cents, the highest figure since the high-price days following the Civil War.

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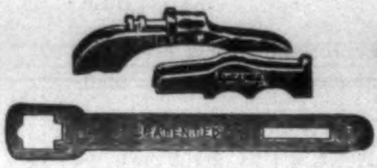

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The Yarn Market

Philadelphia.—Confidence in the probability of a degree of improvement in demand for cotton yarns was somewhat strengthened by receipt of inquiries for mercerized yarns. At the same time, it was stated by several yarn dealers that they found spinners showing greater activity at present than for months back, in search of business, some of the Southern mills making daily use of the long distance telephone to solicit orders while other spinners are here in person and are going over the ground carefully.

As to mercerized yarns, opinion seems to differ here as to the present size of available stocks of them. To judge from some of the prices quoted within the last few weeks, mercerized yarn stocks must be large in some quarters. On the other hand, the character of the inquiry recently received for these yarns seems to indicate that a good many users of them have no stocks whatever. As to prices, there have been some mercerized yarns offered here at prices considerably under those asked for the natural yarn, so that a real basis of market values for mercerized counts may not be found for some weeks to come.

Some sales are heard of at slightly higher figures than heretofore, including 100,000 pounds of 8s three-ply duck yarn at 30 cents, whereas 28 cents is very generally quoted on this yarn ,and 50,000 pounds of 30s single carded cones at 40 cents a pound, as compared with a last preceding sale price of 37½ cents a pound reported.

In other directions there appears to have been some additional shading of prices, as in 12s single carded cones, for example, of which sales are reported at 31 cents, and 24s cones at 36 cents a pound. The lower rates reported earlier in the week, as effective for the coarse and medium counts of Southern carded single and ply skeins an dwarps, are again confirmed by spinners' offerings received here.

Figuring good middling cotton at 16 cents a pound, some of the spinners visiting this market insist that carded yarns, on the basis of 10s are costing 32 or 33 cents a pound to spin at present. They admit, however, that spinners' costs are without much influence on current rates.

Distributors take up the spinners' argument at this point and express the view that a spread of 16 or 17 cents between cost of cotton and manufacturing cost of yarn is, obviously, reasonable, and that yarn users may decide there is little more to be squeezed out of yarn prices by waiting longer. So that, should cotton find adequate support at its current level some buying of yarns in fair-sized volume may be uncovered shortly.

Conflicting information regarding cotton is received in the market almost daily. A local house with buying connections in the Southwest has a report of good middling bringing only 11 cents a pound in Texas, while another house says it is informed spinners are getting all the Eastern Belt cotton they want at 14 to 14½ cents a pound, for good middling. This is mentioned as possibly throwing some light on whether cotton is being held as closely as was expected in some quarters.

The other side of the story is furnished by an Alabama bank, located in a small community, which informed a local cotton yarn factor that cotton was being held there as never before. Out of a total production and carry-over amounting to 6,050 bales in the district in question, less than 100 bales have been sold thus far, according to the bank. It was further stated that some growers in this section not only have held onto their entire 1920 crop, but have not yet sold a pound of their 1919 trop.

Southern Two-Ply Warps.

8s	.35	a36	20s	.39	a40
10s	.36	a37	24s	.40	a41
12s	.37	a38	26s	.41	a42
14s	.38	a39	30s	.44	a45
16s	.39	a40	40s	.55	a60

Southern Two-Ply Skeins.

8s	.35	a36	20s	.39	a40
10s	.36	a37	24s	.40	a42
12s	.37	a38	26s	.41	a42
14s	.37	a38	30s	.42	a43
16s	.38	a39	40s	.55	a60

Southern Single arps.

8s	.35	a36	20s	.30	a40
10s	.35	a36	24s	.42	a43
12s	.36	a37	26s	.43	a44
14s	.37	a38	30s	.45	a46
16s	.38	a39	40s	.55	a60

Southern Single Skeins.

8s	.34	a35	20s	.38	a39
10s	.34	a35	24s	.39	a40
12s	.35	a36	26s	.41	a42
14s	.36	a37	30s	.42	a44
16s	.37	a38	40s	.55	a60

Southern Frame Cones.

8s	.32	a33	20s	.37	a38
10s	.32	a33	22s	.37	a38
12s	.33	a34	24s	.39	a40
14s	.34	a35	26s	.40	a41
16s	.35	a36	30s	.42	a43
18s	.36	a37	40s	.53	a55

Warns Users to Fill in Yarn Demands Now..

Philadelphia, Dec. 2.—C. M. Plowman, of 106 Chestnut street, has received the following letter from William C. Foulds, persident of the General Processing Co., this city dated Nov. 26, indicating the limited size of local cotton yarn stocks.

"We think it proper to advise you that the large stocks of yarns belonging to our customers have been almost wholly depleted and our storage rooms are practically empty. It is obvious that everyone is putting off buying skein yarn stocks in expectation of securing them at lower prices. Unless spinners have large stocks on hand available for immediate shipment, there will surely be a great scarcity of yarn when the demand begins. We are not buyers of yarns and therefore not as closely in touch with market conditions as yourself; but it occurs to us that it would be well for all our customers to buy at once a certain portion of their supplies, to insure themselves against an otherwise inevitable embarrassment for materials. Moreover, the winter is on and shipping delays may be multiplied."

Fine Community Spirit Features the First Fair at Pomona Mills, Greensboro, N. C.

A remarkable demonstration of community spirit featured the first annual fair of Pomona Mills held at this thriving village on western border of the city. Approximately 800 or 1,000 people attended.

The fair, which had many of the features of the county and state fairs, began at 10 o'clock with a parade made up of gayly decorated automobiles, clowns and band. Following the parade, R. J. M. Hobbs, Greensboro attorney, delivered an open air address, talking on the value of community activities and the mutual responsibility of management and employees to support them with their interest.

Perhaps the biggest event of the fair was the baby contest conducted in the afternoon. There were 30 babies entered, and all were examined by Mrs. Dorothy Hayden, county health nurse, as a part of the county program of baby improvement. The awards were made on the basis of healthiness and development according to age. Arthur Calhoun, little son of Mr. and Mrs. Charles Calhoun, took the $5 gold prize for the best baby under one year, scoring 98; and Margaret Calhoun, daughter of Mr. and Mrs. Tom Calhoun, won the $5 gold piece for being the best baby between one and two years, her score being 97¾.

There were also cooking demonstrations during the afternoon, and during the evening fortune telling, a candy wheel, booths for the sale of cake, cream and sandwiches. Throughout the day the band was much in evidence, winding up the evening with a real concert.

The exhibits were numerous and well worth seeing. The fancy work exhibits were said to have surpassed those at the Greensboro Fair. Miss Stevenson, Guilford county demonstration agent, and Mrs. C. A. Boren were the judges. The list of prize winners follows:

Cooking: $1 prizes, best biscuits, Miss Modestine Jones; best pie, Mrs. F. L. Turpin; best chocolate cake, Mrs. F. L. Turpin; best cocoanut cake, Mrs. McCall; miscellaneous cake, Mrs. J. W. Goodroe; home-made candy, Miss Thelma Rhyne; butter, Mrs. Atchinson.

Canned and preserved goods: $2 prizes, assorted canned vegetables, Mrs. Charles Bain; assorted fruit, Mrs. L. White; assorted jelly and preserves, Mrs. Lena Tesh; 1 prizes, best jar sour pickles, Mrs. Seagraves; sweet pickles, Mrs. Charles Bain; canned peaches, Mrs. Jim Moore; canned tomatoes, Mrs. Cora Iddings.

Best fern, Mrs. Brooks.

Fancy work and sewing: Prize for collection of fancy work divided between Mrs. Charles Bain, Mrs. Hudson and Mrs. A. Brown. $1 prizes, best piece crocheting, Mrs. Myrtle Edwards; embroidery, Mrs. John Henderson; best garment trimmed with handwork, Mrs. A. Brown; cotton quilt, Mrs. Molly Watkins; fancy quilt, Mrs. Jim Moore; best piece of plain sewing, Mrs. Berrier.

Children's competition (under 14 years of age): Best piece of sewing, Vivian Henderson; fancy work, Josephine Green; best cake, Hudson Thomas.

Miscellaneous prizes: $1, most interesting antique, Mrs. A. E. Johnson, child's vest 114 years old; most interesting curio, Mrs. E. L. Stratton, collection of tapestry, hunting knives and spears from India; home grown vegetables, Mrs. Nettie Wright; best hog, J. Stout; second best hog, John Burgess; best coop chickens, M. C. Lamb; best single chicken, Johnnie Seagraves.

Best decorated automobile, L. H. Thomas, $5 prize; best clown, Mr. Richie; best stunt, Chalmers Coe.

It was a matter of great surprise and gratification that the first fair, prepared in so short a time, should have been such a credit to the community. It was possible only because every individual was willing to do all he or she could for its success. Already everyone is planning for the next one to be even better, as it surely will be.

Cotton Movement Shows Decrease.

New Orleans, Dec. 2.—Secretary Hester's New Orleans Cotton Exchange statement issued today covers the monthly movement to the close of November. Compared with last year, it shows a decrease for the month in round figures of 655,000, an increase compared with the year before last of 43,000.

The total for November was 1,790,236 against 2,441,698 last year.

The amount of the crop brought into sight for the four months from August to November, inclusive, is 900,000 under last year.

The movement since August 1 shows receipts at all United States ports 2,649,872 against 2,808,577 last year.

Overland across the Mississippi, Ohio and Potomac rivers to northern mills and Canada, 217,371 against 534,140 last year. Southern mill takings, exclusive of consumption at southern out ports 959,000 against 1,508,256 last year. Interior stocks in excess of those held at the close of the commercial year, 514,271 against 389,896 last year.

These make the total movement of the cotton crop brought into sight for the four months ending close of November 4,340,514 against 5,240,874 last year.

Northern spinners increased their total takings for the four months to 423,350 against 995,212 last year.

Foreign exports for the four months of the season have been 1,732,034, showing a decrease under last year of 282,230.

Stocks at the seaboard and the twenty-nine leading southern interior centers at the close of November were 2,597,820, against 2,600,435 last year.

Including stocks left over at ports and interior towns from the last crop and the number of bales of the current crop brought into sight during the four months, the supply has been 5,801,921, against 7,169,833 last year.

"Mine is a blasted life," remarked the man as he went sailing through boundless space after kicking a can of dynamite.

There's a big difference between the deserving poor and those who deserve to be poor.

THE OXHEART UNIT

Leather Belting for a Purpose

LOCATED here in the very heart of the great textile district of the South we have had opportunity for a detailed study of the belting needs of the mills. We found that the complaint of most users was "too many grades, too many brands, too much uncertainty in the purchase." We did the obvious thing. We specialized our effort to produce belting that was at once suitable for textile mills, uniform in quality and easy to identify. The OXHEART UNIT is the result and we are putting it on the market with every assurance that it will be welcomed by the trade not only as a better belting but as a step in the direction of specialization never before attempted in the belting industry.

OX HEART · GRANT LEATHER CORPORATION ·

Stock at
GASTONIA, N. C.

Plant and General Office
KINGSPORT, TENN.

The *Oxheart Unit* is made up of eight belts, ***each designed for a special purpose***. For convenience in ordering, the belts are numbered and known as Oxheart 17, Oxheart 24 etc. The brand OXHEART insuring you of the best of leather and workmanship, while the number indicates the design of the belt and the purpose for which it is built. OXHEART BELTS reduce belting purchases to a positive basis, eliminating all vague, conflicting descriptive terms that have long been applied to leather belting.

Manufactured only by the
GRANT LEATHER CORPORATION
Largest Manufacturers In The South *KINGSPORT, TENNESSEE*

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FOR TEXTILE MILLS
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SHADE TO SUIT
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REEVES, JENNINGS & CO.
Selling Agents for Southern Mills Producing
COTTON FABRICS
For Converting, Manufacturing, Jobbing and Export Trades
55 Leonard Street NEW YORK CITY

Cotton Goods

New York.—Cotton goods were more active during the past week than for some time and prices were a little advanced. Several large sales were reported and inquiries were more numerous. Encouraging reports have come from many sections.

A quieter one is noted in gray goods. The recent buying has had a good effect in that it has served to show traders that they cannot rely long upon current prices holding on a level below the cost of production once it is made clear that some consumer actually needs cloths. It has served to stabilize a market that had become most erratic. It has also shown manufacturers that if they really want to sell goods they must be prepared to feed buyers on the rise and not make the rise and invite buyers in afterward.

The printcloth boom was short-lived. Mills were firm for their advanced prices, and turned down quite some business. The conversation in the market continued along the fashion, suggesting that the mills would have done much better to have accepted more of the good business that had been offered them. On the other hand,the suggestion was put forward that the business of this week represented a good foundation. It was sufficient to start a number of the Southern mills working on full time soon—and the prediction was made that quite a few mills would start up at full time, with reduced wages, during the month. Some opinions heard were that the market might be benefited if the mills were in no hurry to start up at capacity for the present.

There was more business done in small quantities of fine cloths for converting, much of it being of an investment character, where the buyers were tempted by the very low prices mills or holders would accept for scattering lots. Print cloth buying was inactive after the best week for some time. Some sheeting prices look very low to buyers, and it is stated that certain sellers are finding it easier to dispose of low priced lots. Prices on print cloths were quoted from 8 to 8¼c for 64x60s, the chances bein that spots could be had in a fe places at 8⅛c and no lower at thi time. It is evident from the buyin character of the week that if th market again goes lower suppor will beforthcoming in the form o further orders so long as a level under 8c prevails and cotton holds o its present level.

No substantial improvement is ye reported in the movement of finished goods in first hands and mills ar increasing, rather than decreasin curtailment operations. On the other hand there have been activ prices in many cases being lowe than the last values placed on goods by mill agents. It is also noted tha more low price retail sales are taking place in various sections of th country, notably so in those centers of industry where idleness is increasing. Plans for curtailed production in mill centers range from absolute idleness for indefinite periods in some large plants, to schedules of four days a week or less in others. It is conservatively estimated that 40 per cent of the capacity of cotton using mills is unemployed. There has been no improvement in the export situation.

Prices follow: 28 inch 64x64s, 6½ cents; 64x60s, 6½ cents; 38½ inch, 64x64s, 8¾ cents; brown sheetings, southern standard, 13½ cents; tickings, 8 ounces, 27½ cents; denims 2.20s, indigo, 25 cents; staple ginghams, 11½ and 20 cents; prints, 12½ cents; dress ginghams, 25 and 27½ cents.

Statistics show that more persons commit suicide on Tuesday than on any other day of the week.

The man or woman who has attained wisdom by experience knows, according to Tid-Bits, that to a brave heart nothing is impossible.

SAVE YOUR WASTE PAPER
Bale It—We Buy It.
CAROLINA JUNK & HIDE CO.
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Charlotte, N. C.

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FINISHOL

Finishol is a scientifically prepared detergent; soluble finishing and softening oil. It is used where any softener is required, in either a rinsing or color bath and is also for boiling out raw stock. It is extensively used with excellent results upon colored stock in the Fries Dyeing Machines.

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OF BALTIMORE
Since 1832

CHARLOTTE
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GREENVILLE, S. C.

THE ANNEX

New York

WHEN Hotel McAlpin acquired The Annex, formerly the Martinique, there was established, first, the spirit of enthusiastic attention that never fails to assure a guest that his patronage is valued.

Following closely upon this first important step came others which have proved equally successful—among them an expert Bureau of Information and Assistance which enables a guest to leave the details of his arrival, departure and trips he wishes to make, to people who are able and willing to assume them.

Under the direction of L. M. Boomer
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32nd to 33rd Street *and* Broadway

Anti-Ballooning and Furtardo Thread Guides

These thread guides prevent excessive ballooning and decrease breakage of ends on spinning frame. They decrease the work of spinners and enable each spinner to run more sides.

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Manufacturers Robert's Roving Clamp and Spinning Frame Cleaner.
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Start Easiest, Run Smoothest, Wear Longest!

PAWTUCKET SPINNING RING CO.

CENTRAL FALLS, R. I.

Want Department

If you are needing men for any position or have second hand machinery, etc., to sell the want columns of the **Southern Textile Bulletin** affords the best medium for advertising the fact.

SYDNOR PUMP & WELL CO.
Richmond, Va.
Supplying Cotton Mills with Water for 30 Years

Wanted—Competent and energetic male stenographer for cotton mill office; single man with mill office experience on production reports, pay rolls, etc. Send references, give age and experience with first letter. State how soon would come. Address A-1, care Southern Textile Bulletin.

Wanted—To buy good second-hand size kettle of 200 or 250-gallon capacity. Must be complete and in first-class condition. State lowest price. Locke Cotton Mills Co., Concord, N. C.

FOR YARN 20s TO 30s.

1 2-Beater Combination Lapper.
6 40-inch Lowell Cards.
2 Drawing, 4 Deliveries, Metallic Rolls, 12-inch Coil.
1 48-spindle 11x5½ Slubber.
2 72-spindle 9x4½ Intermediate.
5 228-spindle 7x3½ Speeders.
12 208-spindle Lowell 1¾" Ring, 2¾" Gage Frames.
2 100-spindle Foster Winders.
4 Eastman & Burnham 6x4" Spoolers.
4 50-spindle Reels.
2 Fales & Jenks Twisters, 1¾" Ring.
Whitin Twisters, 2 and 3-inch Ring.
500 Draper No. 2 Spindles.
400 McMullen Weave Room.
8 Crompton & Knowles 84" Looms, Jaquard attachment, making table damask, shafting pulleys and belting and 10 H. P. motor, all in good conditions. Immediate shipment.

J. M. Williams

Stonewall Hotel, Charlotte, N. C.

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12 Whitin Drawing Frames, four deliveries each, 12" coilers, new metallic rolls. 2-9x4½ Intermediates, 98 spindles each, excellent condition, extremely low price. Hunter Machinery Com-

Hunter Machinery Co.,
Marion, N. C.

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AGASCO ROAD BINDER
for smooth, resilient, dustless roads—Two gallons per square yard does the work.

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for concrete roads—Prevents too rapid drying.

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OUR TAPES ARE ENDORSED BY MACHINERY EXPERTS. They know their quality and they know their scientific structure. Exhaustive trials by practically all machinery makers have demonstrated that they have no superior.
Write us.

Barber Manufacturing Co., Lowell, Mass.
SPINNING TAPE SPECIALISTS

EMPLOYMENT BUREAU

The fee for joining oud employment bureau for three months is $2.00 which will also cover the cost of carrying a small advertisement for one month.

If the applicant is a subscriber to the Southern Textile Bulletin and his subscription is paid up to the date of his joining the employment bureau the above fee is only $1.00.

During the three months' membership we send the applicant notices of all vacancies in the position which he desires.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern Textile Industry.

WANT position as superintendent of medium size mill or overseer weaving. Am practical weaver on sheetings, prints, twills, chambrays, light and heavy ducks, tire and cord tire fabrics. Am now superintendent of cord tire fabric mill but prefer another location. Am 38 years of age. Can come on short notice. Address No. 2899.

WANT position by young married man with several years experience as bookkeeper, pay roll clerk, general office man, etc. Now employed by large Georgia Mill, but have good reasons for wanting to make change. Address No. 2909.

WANT position as superintendent of good yarn or weaving mill. Could take some stock in plant. Thoroughly competent and now employed by large mill but for good reasons would like to make change. Address No. 2925.

WANT position as overseer of spinning in mill in North or South Carolina. Overseer on present job for 2 years. Good reason for wanting to make change. Reference from past and present employers. Address No. 2926.

WANT position as overseer of carding in mill of not less than 25,000 spindles by man 39 years of age, 8 years as overseer, 5 years on present job. Can furnish reference and good reason for wanting to make change. Address No. 2927.

WANT position as overseer of spinning by man of long practical experience and able to get results. References furnished by leading manufacturers and former employers. Address No. 2928..

WANT position as overseer of spinning by man 45 years old with 15 years experience as overseer and several years in other capacity. Best of reference. Address No. 2929.

WANT position as overseer of spinning or superintendent of small yarn mill. Address No. 2930.

WANT position as manager or superintendent by man of long experience on all kinds of work in South and North. Special experience on tire , fabrics shirting, etc. Best of reference. Age 42. Address No. 2932.

WANT position as assistant superintendent of large mill or superintendent of small mill. Now assistant superintendent but want larger job. Ten years practical experience and textile graduate of N. C. College of A. and E. Not married. Best of reference. Address No. 2933.

WANT position as secretary or secretary and treasurer of mill by man of good excellent ability and knowledge of cotton mill work. Thoroughly competent and honest. Clean habits. Address No. 2934.

WANT position as superintendent of weaving mill on colored work. Have been employed in colored goods mill for years, recently as superintendent. Wish to change to new mill with improved machinery. Address No. 2935.

WANT position as superintendent by experienced man of character and ability who can get results and keep mill going. Address No. 2936.

WANT position as overseer of carding or spinning or assistant superintendent in 25,000 to 35,000 spindle mill. Now employed as assistant superintendent but wish to make change. Prefer mill in

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WANT position as superintendent of mill by man of good habits and ability to get results. Will go anywhere if right kind of offer is made. Address No. 2938.

WANT position as overseer of weaving on white or colored goods. Many years experience and reference as to character and ability. Address No. 2939.

WANT position as superintendent, overseer of carding and spinning or carding in large mill. Long experience as overseer of carding and spinning and can get results which will please owners of mill. Address No. 2940.

WANT position as overseer of cloth room. Fifteen years experience. Can give best of references as to character, ability, etc. Address No. 2941.

WANT position as overseer of weaving in mill making plain goods of any class. Long experience. Can furnish reference as to character and ability. Address No. 2942.

WANT position as superintendent on plain weaving mill or yarn mill on hosiery yarn. Experienced on ring and mule spinning and can get production if it can be gotten. Address No. 2943.

WANT position as superintendent by man of good executive ability. Experienced on duck and yarns of all kinds. Can come at once for good offer. Address No. 2944.

WANT position as overseer of cloth and finishing room in large mill by man experienced on large variety of cloths and for some time recently on denim. Address No. 2945.

WANT position as superintendent of small mill or overseer of carding or spinning or both. Experienced on wide range of yarns and can furnish reference from some of best manufacturers in South. Address No. 2947.

WANT position as superintendent by experienced man now employed but wishes to changes for something better. Can furnish reference from some of best manufacturers in South. Address No. 2947.

WANT position as overseer of weaving in North or South Carolina. Have been running weave room for number of years and can furnish reference as to character and ability. Address No. 2949.

WANT position as overseer of carding or spinning or both in large mill or superintendent of small mill. Several years of successful experience and a wide range of work. Reference. Address No. 2950.

WANT position as overseer of spinning. Experience on all kinds of yarn and can successfully operate any size room. Best of reference as to character and ability. Address No. 2951.

WANT position as superintendent of yarn or weaving mill and can operate successfully any medium size mill. Would not consider less than $3,000 per year. Address No. 2952.

WANT position as overseer of carding. Can furnish reference as to character and ability and can get production and keep room in good order with plenty of help. Address No. 2953.

WANT position as overseer of cloth room or second hand in large cloth room. Prefer white goods. Married, 33 years of age, 18 years in mill, 13 years as overseer. Address No. 2954.

WANT position as overseer of spinning in North Carolina or Virginia. 38 years old and long experience in mill. Address No. 2955.

WANT position as superintendent or overseer of carding. Twenty-five years experience on all kinds of coarse and fine yarns. Good reference as to character and ability. Address No. 2956.

WANT position as superintendent of small yarn mill in small town or rural district. Married and have three children. Twenty-one years experience in mill. Several as overseer. Address No. 2957.

WANT position as superintendent. Special experience in both combed carding and spinning of fine yarns. Good reference. Address No. 2959.

WANT position as master mechanic by man with long experience in all kinds of power and drives in mill work in some of largest plants in North Carolina. Thoroughly reliable and competent. Address No. 2960.

WANT position as overseer of weaving. Experience on most all cloths can get good references from former employers if wanted. Address No. 2962.

WANT position as superintendent. At present spinner. Have run twisting and weaving. Especially experienced on duck and tire fabrics. Have successfully superintended at previous times. Best of reference. Would locate permanently in Texas if suited in price and location. Address No. 2961.

WANT position as superintendent or overseer of weaving, dyeing, or finishing. Have had experience on all lines and can furnish reference as to character and ability from former employers. Address No. 2963.

WANT position as overseer spinning, spooling, warping, winding or twisting. Now overseer but wish to change. Age 30. Married, have three small children. Very best of references. Overseer past 6 years. Address No. 2964.

WANT position as supernitendent or manager of good cotton mill. ould like to take charge of mill under construction with view of becoming superintendent when finished. Can furnish reference. Address No. 2965.

WANT position as superintendent of good mill in Georgia or Carolinas. Experienced on high grade cotton yarns and ducks. Can furnish reference as to character and ability. Address No. 2966.

WANT position as superintendent. Practical mill man of good habits and can furnish best of references from former employers if wanted. Address No. 2967.

WANT position as overseer of carding or spinning or both. Will go anywhere for good job. Can handle any size job. Good character. Address No. 2968.

WANT position as superintendent by man with long and varied experience. Can get results and keep help. Address No. 2969.

WANT position as assistant superintendent or efficiency man in large cotton mill. Would accept large weaving or cloth room. Thoroughly capable. Address No. 2970.

WANT position as superintendent or overseer weaving in large mill on either plain or fancy work, have had experience with both positions and can give good references as to ability and character. Address No. 2971.

WANT position as superintendent, overseer of spinning or carding and spinning. Practical mill man who can get results. Address No. 2972.

WANT position as overseer of spinning or winding and twisting in large mill or all in small mill. Have had number of years experience as overseer and can furnish excellent reference from former employer. Address No. 2973.

WANT position as superintendent or overseer of carding and spinning. Can come at once and furnish good reference. Address No. 2974.

WANT position as superintendent of small yarn mil or overseer of carding and spinning in large mill. Good references. Address No. 2975.

WANT position as overseer of carding and spinning or superintendency of small mill. Can furnish best of reference as to character, ability, etc. Address No. 2977.

WANT position as overseer of carding or spinning or both. Can furnish references as to character and ability. Have had number years experience on all size yarns. Address No. 2978.

WANT position as overseer of spinning either day or night. Would accept position as second hand in large room. Reference as to character and ability. Address No. 2980.

WANT position as overseer of large weave room on plain or colored goods or superintendent of small weave mill. Address No. 2976.

WANT Position as superintendent by man of long successful experience and a wide range of yarns and cloth. Address No. 2979.

WANT position as superintendent of small mill or overseer of carding or spinning or both. Experiened on ide range of yarns and can furnish reference as to character and ability. Address No. 2986.

Improved Rice Dobby Chain

reduces broken bars to a minimum because the wire eyes do not break into the side walls of the peg holes. The eyelets are fastened so securely that they cannot work loose.

Rice Dobby Chain Co.
Millbury, Mass.
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"Cleanliness in next to Godliness"

Clean your floors twice a week for your health's sake. Mi Cleanser makes them sanitary & healthful.

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—B—

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—C—

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—D—

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—E—

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—F—

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—H—

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—I—

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—K—

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—L—

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—M—

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—N—

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—O—

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—P—

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—R—

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—T—

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—U—

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—V—

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—W—

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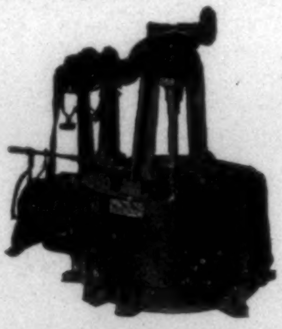

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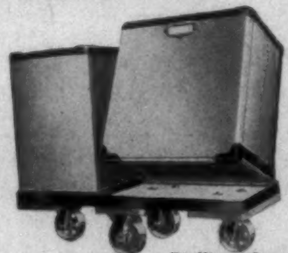

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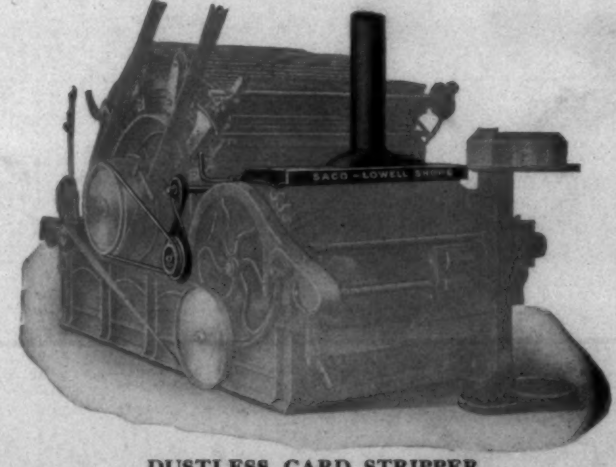

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